

GTC-2000

200 US TON MAX. CRANE CAPACITY



September 2022. Unless otherwise specified, all information in this brochure refers to a standard crane equipment, and it is intended as general information only. No liability is assumed. Errors reserved. Product specifications and prices are subject to changes without notice. The photographs and/or drawings in this brochure are for illustrative purposes only. For correct and safe crane operation, the original operating manual and lifting capacity charts are essential. Failure to follow the corresponding Operator's Manual when using our equipment or failure to otherwise act responsibly may result in property damage, serious injury or death. The sole warranty applicable with respect to our equipment is the standard warranty as per general terms and conditions of sales and service (ask your local Tadano dealer for details), and Tadano makes no other warranty, express or implied. All rights reserved. Any use of the trademarks, logos, brand names and model names used herein is prohibited.

© Tadano Ltd. 2022

Contents

Specifications	7
Specifications	8
Transportation	9
Transportation.....	10-12
Transport variants	13
Operation	15
Speeds and gradeability	16
Main boom.....	17
Slewing	17
Hoist.....	17
Hook Blocks	17
HA: Main boom	18-53
HAV: Folding swing-away jib	54-121
HAV-HY: Hydraulic swing-away jib	122-188
Notes to Lifting Capacity	189
Technical Description	191
Basic machine	192-193
Optional Equipment (non-exhaustive)	194

Key

	Counterweight		Boom telescoping
	Track		Boom elevation
	Radius		Working speeds
	Main boom		Max. line pull
	Folding swing-away jib		Rope diameter
	Hydraulic swing-away jib		Rope length
	Roll/list angle		Hook block (capacity - sheaves - rope diameter)
	Wind speed in ft/s (feet per second)		Number of lines
	Track shoe		Possible load of hook block
	Hook block		Number of sheaves in boom head
	Hoist 1		Distance head sheave axle – hook ground
	Hoist 2		Weight of hook block
	Travel speed		
	Gradeability		
	Slewing		

Key



Track left



Track right



Extension beam



Base crane



Central ballast



Truck pay load



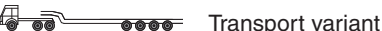
Counterweight base plate



Counterweight plate



Assembly weight



Transport variant

Highlights

196.9 ft pinned boom; 16.4 ft to 75.5 ft jib (tiltable from 0° to 36°)

Lifting capacities up to 4° roll/list angle, all „Pick & Carry“, jib capacities up to 1° roll/list angle

Double hook operation with rooster sheave or jib

Powerful hoists with 1.02 in. rope (30,640 lb pull / 456 ft/min. speed)

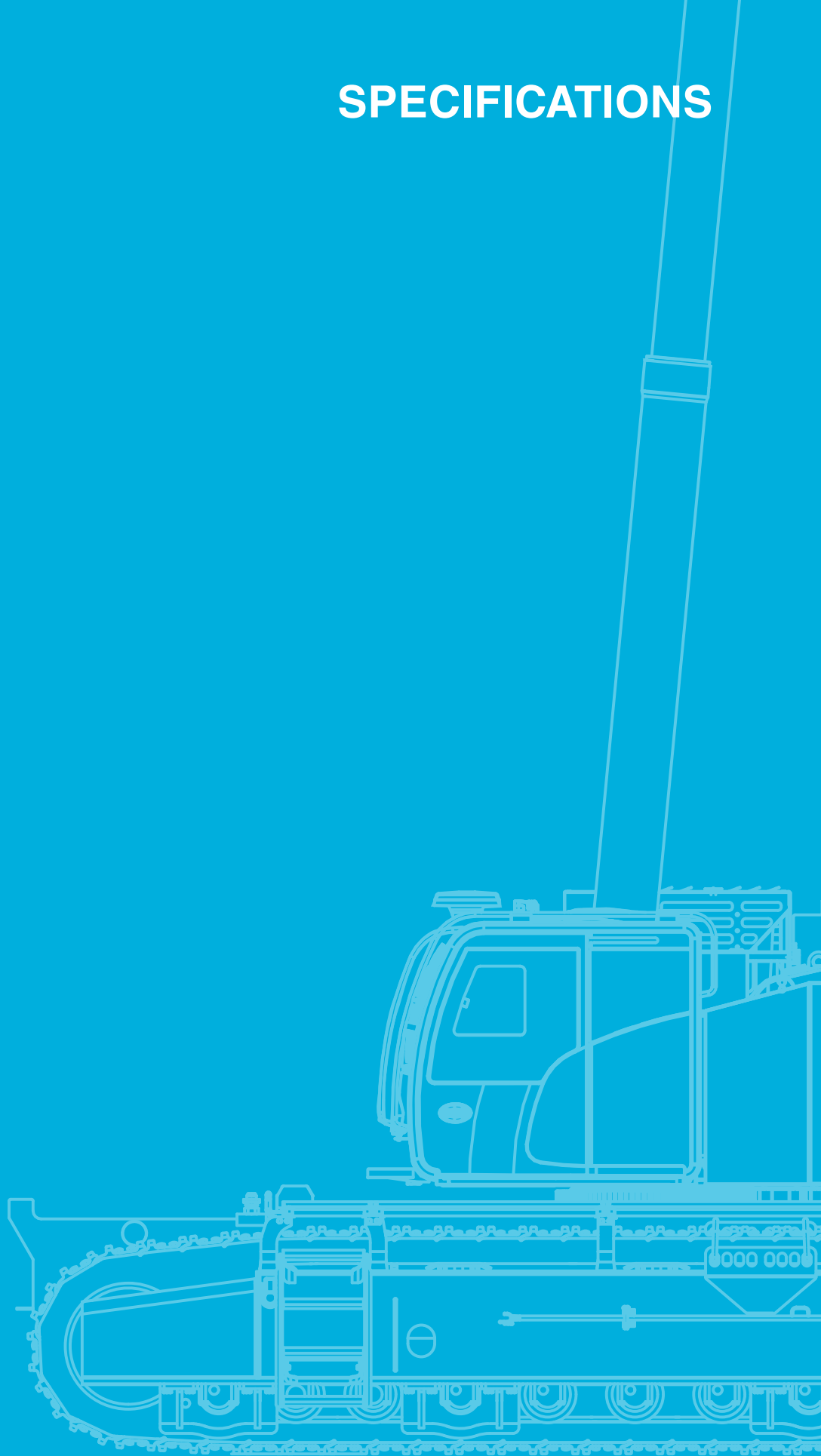
Powerful, robust and versatile undercarriage with smart and comprehensive access concept

Fully self rigging operation

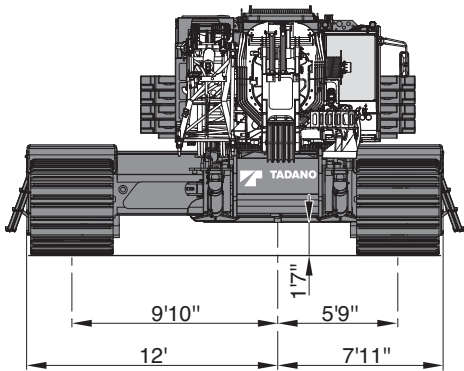
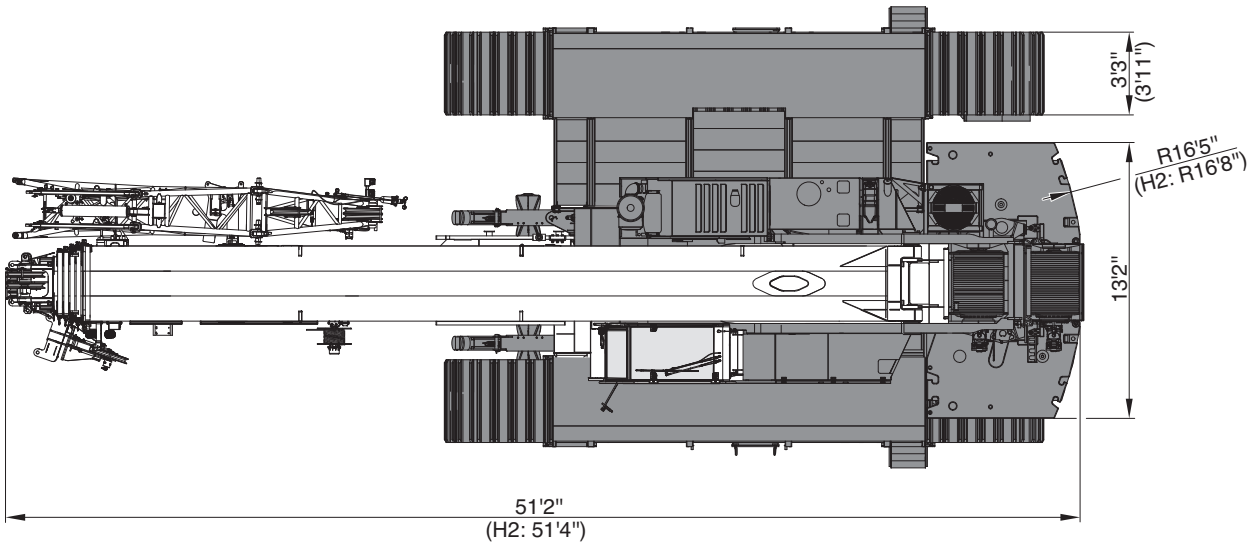
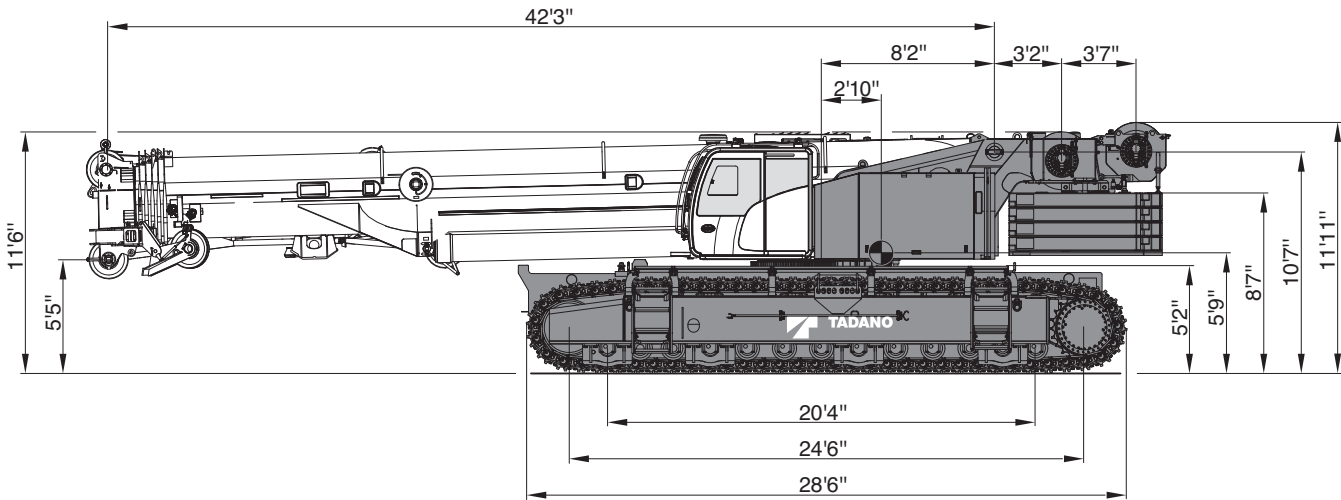
Remote control for all rigging and operating functions

Best in class traction force (326,000 lbf)

SPECIFICATIONS



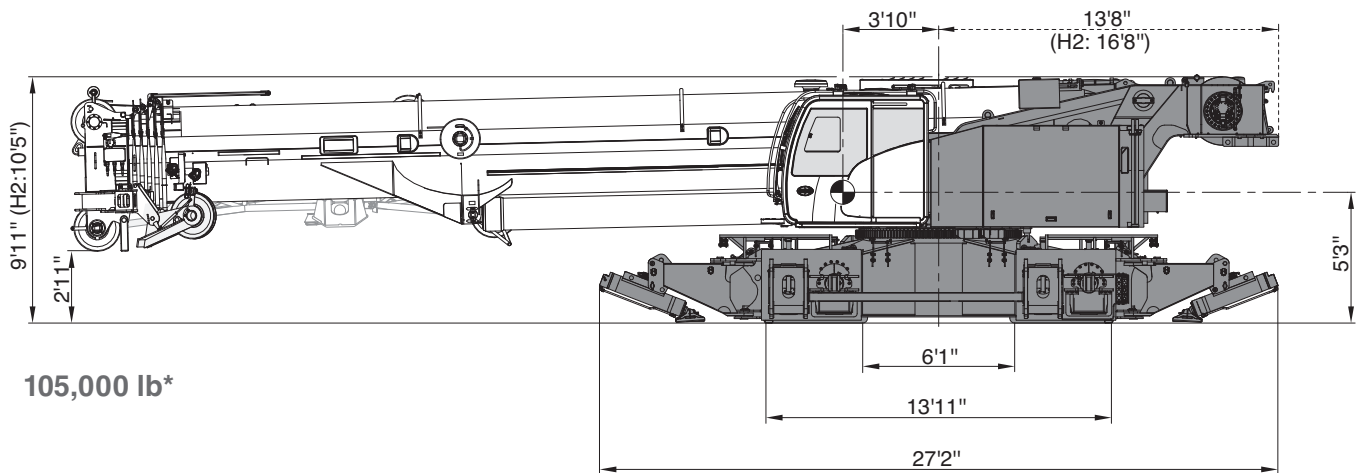
Specifications



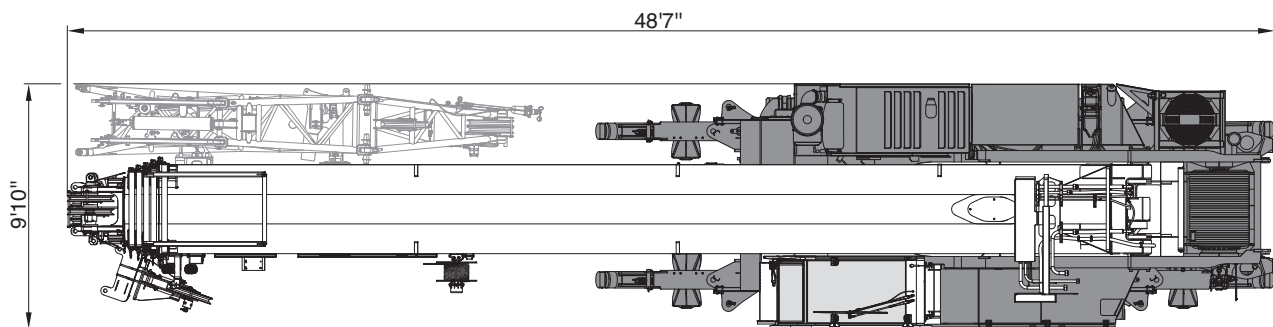
TECHNICAL DATA FOR TRANSPORT



Transportation

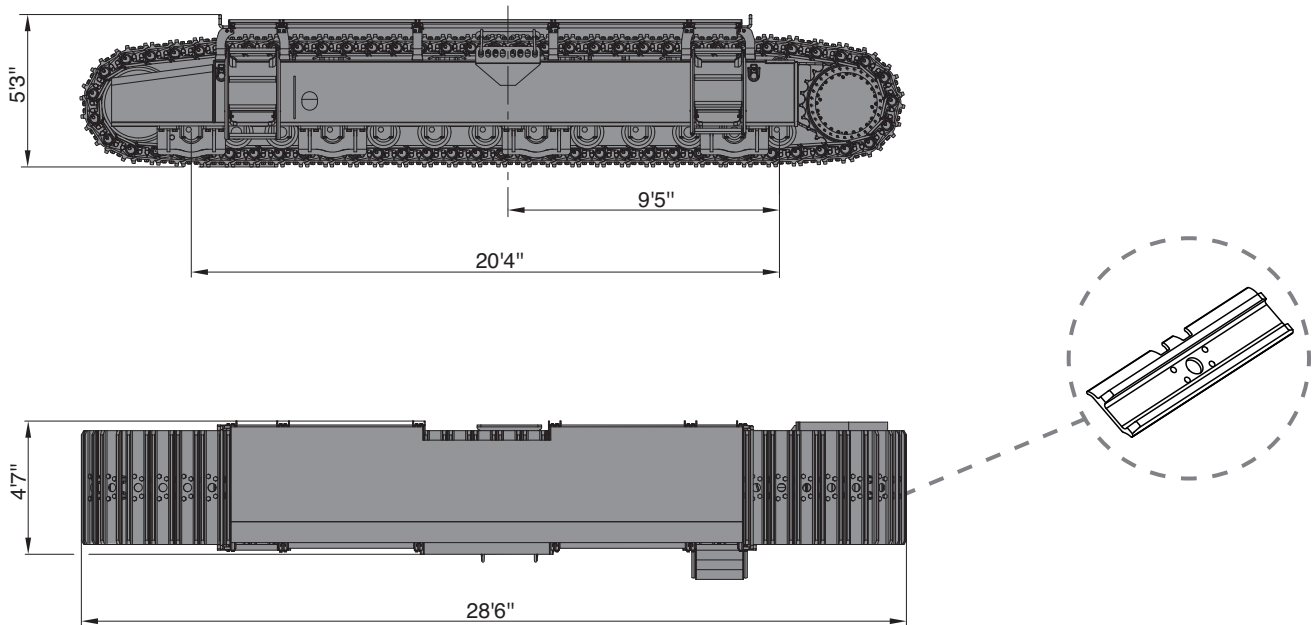


* 107,990 lb with Hyd Jib / 107,660 lb with Mech Jib

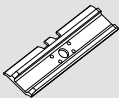
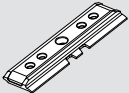
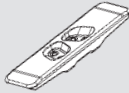


Transportation

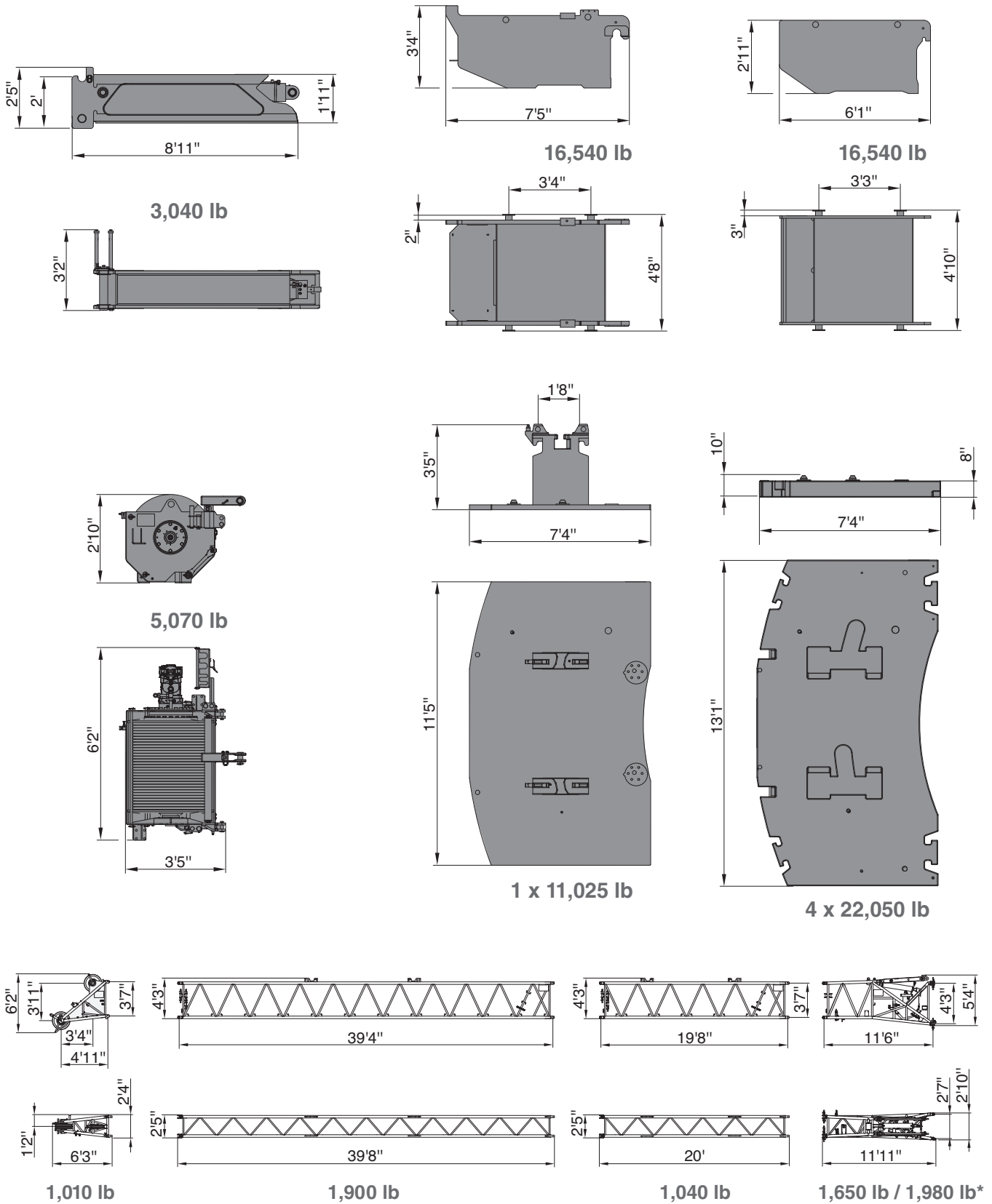
40,800 lb*



* Weight may vary depending on track shoes – please consult table!













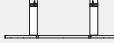
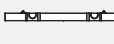






			
Width	2-bar shoe	with Polyamid pads	Flat shoes
3.3 ft	40,800 lb	42,300 lb	46,300 lb
3.9 ft	42,800 lb	44,500 lb	48,500 lb

Transportation



* Hydraulic version

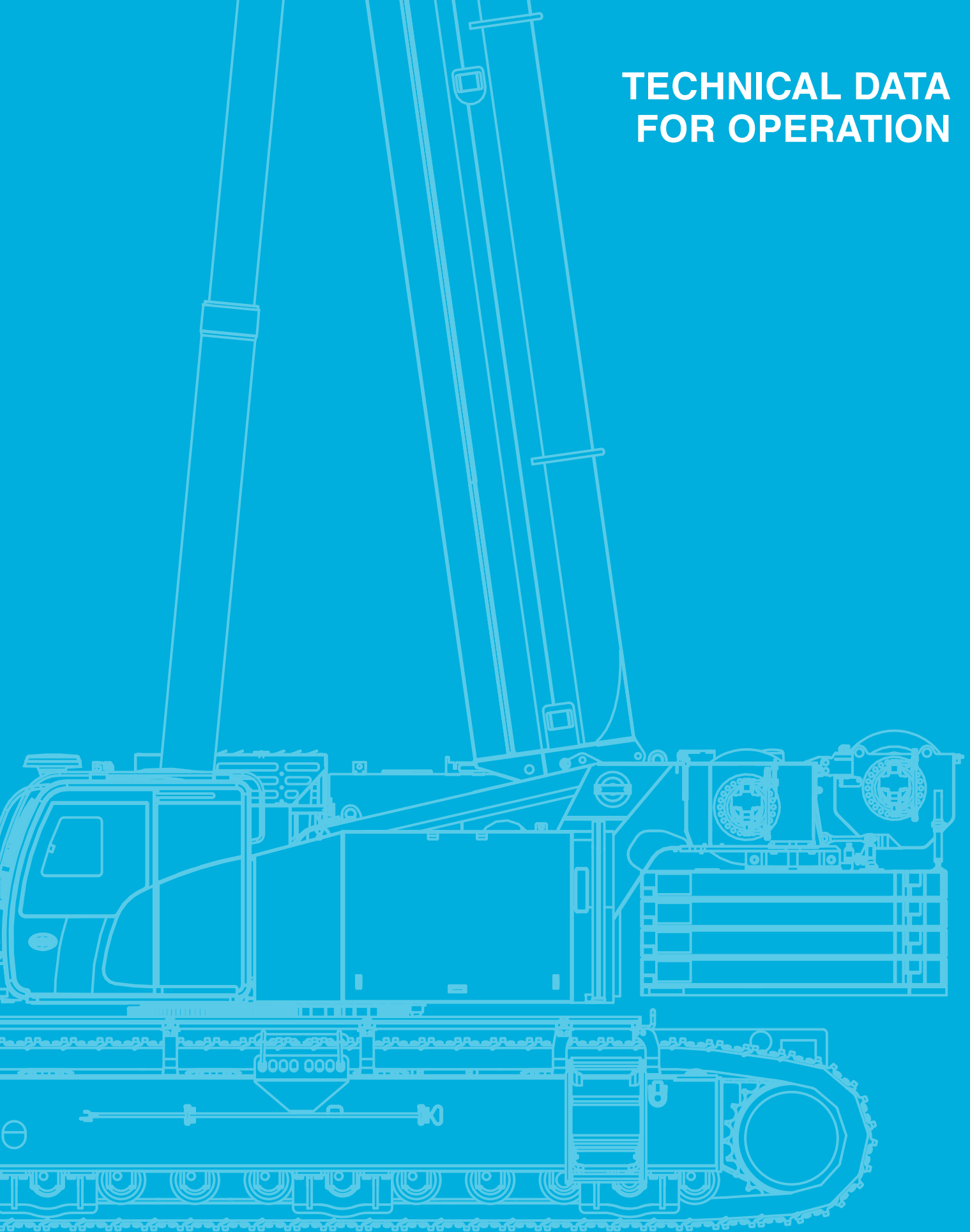
Transportation

Transport variants																									
																									
	[lb]	#3			#4			#5			#6			#6											
	105,000	1			1			1						1											
 *	92,800										1														
	40,800**	2			2			2				3		2											
	40,800**		3			3			3			4			3										
 1	3,040										2														
 2	3,040										2														
 3	3,040										2														
 4	3,040										2														
	16,540	2			2			2			2				4										
	16,540	2			2			3			2				4										
	11,025	2				3			4			3			4										
	22,050	2				3			4				5			5									
	22,050		3			4			4				5			5									
	22,050		3			4			5				6			6									
	22,050		3			4			5				6			6									
 2 (H2)	5,070	1				4			5			4		2											
 3	2,430	1				2			5	2					3										
 [lb]		112,436	106,924	106,924	105,000	76,100	73,875	71,220	105,000	57,340	57,340	55,125	51,600	92,800	47,670	51,825	45,870	44,105	44,100	105,000	45,870	43,230	44,105	44,100	44,100

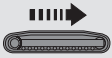
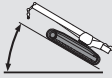
* without extension beams

** 2-bar shoe

TECHNICAL DATA FOR OPERATION



Operation

Speeds and gradeability	
	Max. 1.43 mph
	26,5° / 50 % without load 4° / 7 % with load

Operation







Main boom

	approx. 530 s (42.3 - 196.9 ft)		approx. 49 s (-1,4° – 82°)
---	---------------------------------	---	----------------------------







Slewing

	1,6 rpm
---	---------

Hoist

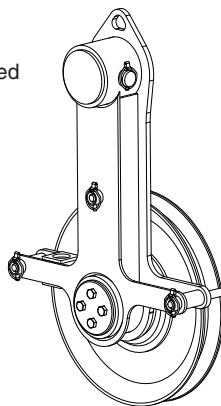
				
	446 ft/min	30,400 lbf	1.04"	804 ft
	446 ft/min	30,400 lbf	1.04"	804 ft

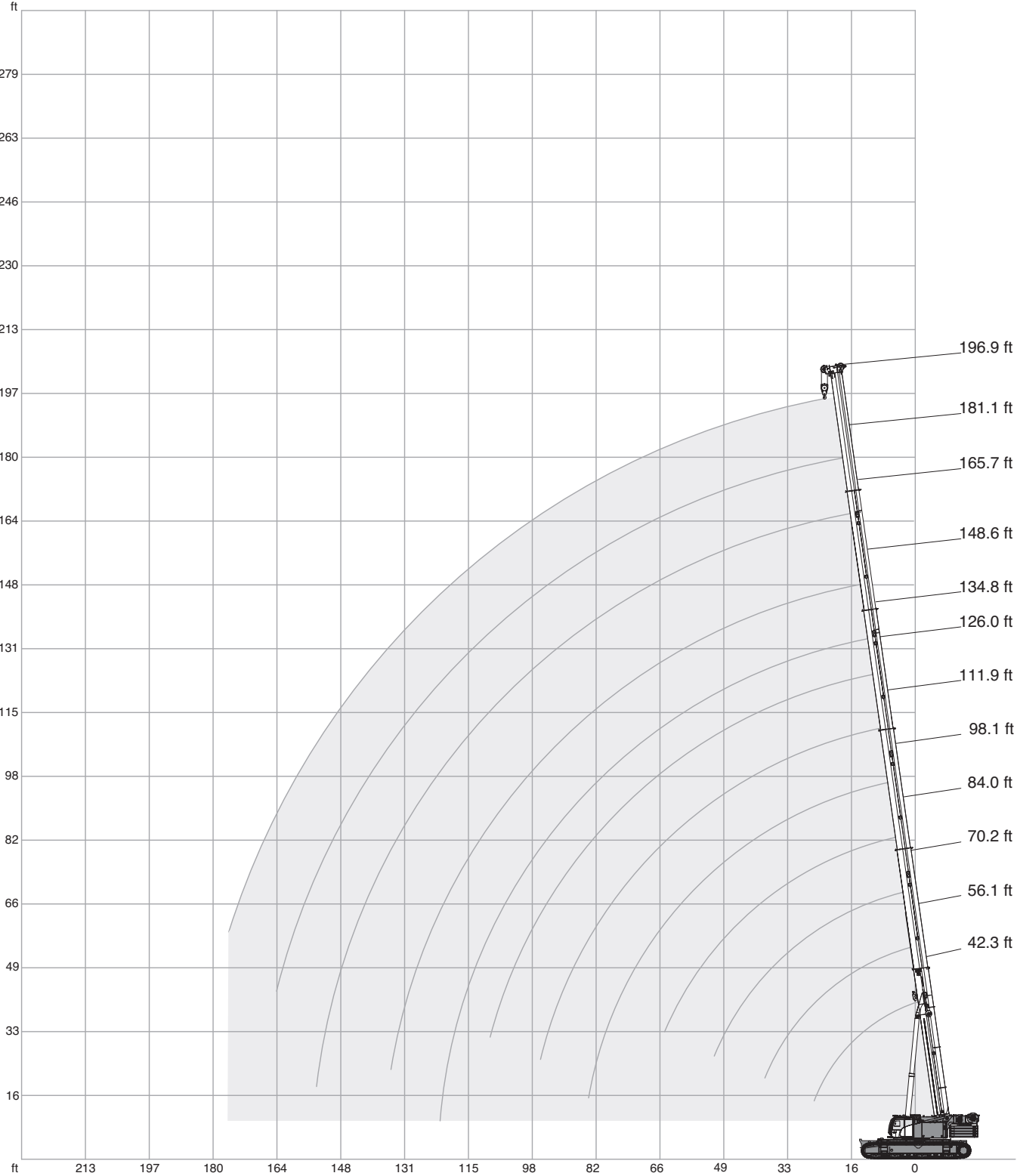
Hook Blocks

					
1	30,400	16-0-26	5	0,880 lb	8.2 ft
2	60,400	41-1-26	5	1,980 lb	10.2 ft
3	90,300	41-1-26	5	1,980 lb	10.2 ft
4	119,700	100-3-26	5	2,430 lb	10.5 ft
5	149,000	100-3-26	5	2,430 lb	10.5 ft
6	177,900	100-3-26	5	2,430 lb	10.5 ft
7	206,600	100-3-26	5	2,430 lb	10.5 ft
8	234,900	160-5-26	5	2,870 lb	10.8 ft
9	263,000	160-5-26	5	2,870 lb	10.8 ft
10	290,700	160-5-26	5	2,870 lb	10.8 ft
11	318,100	160-5-26	5 + 1*	2,870 lb	10.8 ft
12	345,000	200-7-26	5 + 1**	5,740 lb	10.8 ft

* Heavy lift sheave required







** Heavy lift sheave and 7 sheaves hook block required








Operation

HA

99,200 lb +  33,100 lb		 19.7 ft					 32.2 ft/s					360°					ASME B30.5		
****		42.3 ft					56.1 ft					70.2 ft							
 		0,3°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb ³⁹⁷															ft		
8	397.0***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
10	344.2**	342.1**	304.6*	218.9	163.5	127.9	-	329.0**	271.6	199.6	152.7	121.1	-	286.6	241.0	181.5	-	-	10
12	329.1**	305.5*	293.8*	212.8	159.5	125.2	-	304.7*	263.6	194.5	149.3	118.6	-	271.8	233.9	177.3	138.6	-	12
14	301.3*	274.8	273.7	207.0	155.9	122.6	-	274.2	256.1	189.7	146.1	116.3	-	253.0	222.1	173.3	135.7	110.0	14
16	270.5	249.6	248.5	201.3	152.2	120.2	-	248.5	245.2	185.0	142.8	114.2	-	234.2	214.5	168.8	132.9	107.8	16
18	242.9	229.3	228.3	195.8	148.7	117.8	-	228.4	227.3	180.6	139.9	112.0	-	218.8	207.0	165.0	130.2	105.8	18
20	217.9	210.2	209.3	190.3	145.2	115.3	-	209.5	208.4	176.2	137.1	109.9	-	204.2	198.3	161.2	127.7	103.7	20
24	182.0	176.4	175.5	174.3	138.0	110.1	-	175.5	174.4	166.2	131.5	106.0	-	173.5	172.2	153.5	122.9	99.8	24
28	154.6	148.7	147.9	146.9	129.8	104.3	-	149.5	148.7	147.5	125.5	102.1	-	146.0	145.6	142.6	117.3	96.5	28
32	129.4	127.8	127.3	126.4	108.3	88.3	-	128.4	127.8	126.6	120.3	98.2	-	127.6	126.9	125.5	112.9	93.2	32
36	-	-	-	-	-	-	-	110.0	109.2	108.1	105.8	94.0	-	109.0	108.2	106.9	101.3	90.1	36
40	-	-	-	-	-	-	-	94.4	93.6	92.5	91.4	88.6	-	92.0	92.0	91.7	91.2	86.1	40
48	-	-	-	-	-	-	-	-	-	-	-	-	-	71.8	71.2	70.2	69.2	68.4	48
56	-	-	-	-	-	-	-	-	-	-	-	-	-	57.3	57.1	56.7	56.4	56.0	56
1)	48.1	48.1	48.1	48.1	48.1	48.1	48.1	35.1	35.1	35.1	35.1	35.1	35.1	26.9	26.9	26.9	26.9	26.9	1)

 		84.0 ft					98.1 ft					111.9 ft							
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°			
ft		1,000 lb															ft		
12	231.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
14	220.3	192.7	145.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14
16	208.6	184.8	145.9	115.3	-	-	181.9	-	-	-	-	-	-	-	-	-	-	-	16
18	195.7	179.3	145.9	115.3	95.0	-	174.4	143.7	114.4	-	-	-	-	-	-	-	-	-	18
20	182.9	176.1	145.5	115.3	95.0	-	166.8	143.7	114.4	91.1	74.5	-	-	138.2	115.5	84.7	-	-	20
24	160.8	160.2	138.8	114.0	93.7	-	148.7	141.5	113.5	91.1	74.5	-	-	131.4	115.5	84.7	66.8	55.5	24
28	143.3	142.4	129.7	110.0	91.4	-	132.3	131.2	109.2	91.1	74.5	-	-	122.0	114.0	84.7	66.8	54.5	28
32	124.7	123.2	119.4	106.1	88.8	-	119.2	118.3	105.4	91.1	74.5	-	-	111.5	109.7	84.7	66.8	54.0	32
36	106.4	105.1	104.5	98.6	84.8	-	105.4	104.4	98.2	90.0	74.5	-	-	101.1	100.2	84.7	66.8	54.0	36
40	93.5	92.4	91.1	89.6	81.3	-	91.5	90.4	89.5	87.4	74.3	-	-	90.7	89.6	83.5	66.8	54.0	40
48	70.7	69.9	69.0	68.6	68.4	-	72.7	71.9	70.8	69.6	68.4	-	-	70.8	69.9	68.7	64.1	54.0	48
56	58.7	58.2	57.4	56.6	55.7	-	57.5	57.0	56.0	55.1	54.1	-	-	55.8	55.0	54.0	52.9	50.5	56
64	48.0	47.5	47.0	46.4	45.7	-	46.9	46.3	45.6	44.8	44.1	-	-	45.1	44.5	43.6	42.8	41.9	64
72	40.1	39.8	39.4	39.0	38.3	-	39.0	38.5	37.9	37.4	36.8	-	-	38.0	37.6	37.6	37.8	37.1	72
80	-	-	-	-	-	-	33.1	32.7	32.3	31.7	31.2	-	-	34.3	34.0	33.4	32.8	32.3	80
88	-	-	-	-	-	-	17.0	17.0	16.5	16.5	16.5	-	-	29.6	29.3	28.8	28.4	27.8	88
96	-	-	-	-	-	-	-	-	-	-	-	-	-	25.8	25.5	25.2	24.8	24.3	96
104	-	-	-	-	-	-	-	-	-	-	-	-	-	19.8	19.7	19.5	19.3	18.8	104
1)	20.9	20.9	20.9	20.9	20.9	20.9	16.8	16.8	16.8	16.8	16.8	16.8	16.8	13.0	13.0	13.0	13.0	13.0	1)

- * Heavy lift sheave required
- ** Heavy lift sheave and 7 sheaves hook block required
- *** Max. crane capacity – with additional special equipment
- **** over front/rear
- 1) Capacities with horizontal boom

Operation

HA

99,200 lb + 33,100 lb		19.7 ft					32.2 ft/s					360°					ASME B30.5
		126.0 ft					134.8 ft					148.6 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft	1,000 lb															ft	
24	91.7	83.8	67.5	-	-	-	-	-	-	-	-	-	-	-	-	24	
28	81.2	79.0	67.0	52.9	42.8	74.8	67.9	50.7	-	-	-	-	-	-	-	28	
32	73.4	72.4	65.4	52.9	42.8	67.0	65.2	50.7	41.0	-	62.9	54.8	-	-	-	32	
36	68.5	68.0	63.3	52.9	42.8	60.8	60.3	50.7	40.1	33.3	57.3	52.6	40.3	32.0	-	36	
40	63.7	63.7	61.1	52.8	42.8	55.1	55.1	50.3	39.1	33.3	52.0	50.1	40.1	32.0	26.0	40	
48	56.1	56.1	56.0	51.4	42.8	46.5	46.3	44.6	39.0	33.2	43.8	42.8	39.5	31.7	25.9	48	
56	50.1	50.1	50.2	48.2	42.8	39.5	39.5	38.6	37.6	32.3	37.4	36.5	36.0	31.0	25.6	56	
64	45.4	45.1	44.6	43.6	41.8	34.7	34.2	34.1	33.4	31.1	32.3	31.6	31.5	29.6	24.9	64	
72	38.7	38.3	37.4	36.8	35.9	31.6	30.7	30.7	30.7	29.6	28.1	27.4	27.4	27.2	24.3	72	
80	32.7	32.3	31.6	31.0	30.4	28.7	28.1	28.1	28.1	27.9	24.9	24.5	24.4	24.3	22.5	80	
88	28.1	27.7	27.1	26.6	26.0	26.4	25.8	25.8	25.8	25.8	22.3	22.2	22.2	22.1	20.6	88	
96	24.2	23.8	23.3	22.9	22.4	24.2	23.8	23.5	23.2	22.7	20.2	20.2	20.2	20.2	19.0	96	
104	21.1	20.6	20.4	20.2	20.2	21.3	21.1	20.6	20.2	19.7	18.5	18.5	18.5	18.5	17.4	104	
112	18.4	18.2	17.8	17.5	17.1	18.6	18.4	18.0	17.7	17.3	17.1	17.1	17.1	17.1	16.0	112	
120	-	-	-	-	-	16.5	16.2	15.9	15.6	15.2	15.8	15.8	15.7	15.4	14.8	120	
128	-	-	-	-	-	14.5	14.3	14.1	13.9	13.6	14.5	14.3	14.0	13.7	13.2	128	
136	-	-	-	-	-	-	-	-	-	-	12.9	12.7	12.4	12.0	11.8	136	
144	-	-	-	-	-	-	-	-	-	-	11.3	11.3	11.1	10.9	10.6	144	
1)	9.9	9.9	9.9	9.9	9.9	8.8	8.8	8.8	8.8	8.8	6.2	6.2	6.2	6.2	6.2	1)	

		165.7 ft					181.1 ft					196.9 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft	1,000 lb															ft	
36	51.2	44.9	-	-	-	-	-	-	-	-	-	-	-	-	-	36	
40	48.2	44.2	32.6	25.7	20.7	44.2	37.5	26.7	20.1	-	-	-	-	-	-	40	
48	41.5	40.1	32.6	24.9	20.7	39.5	36.6	26.7	20.1	15.7	33.3	27.6	20.5	15.2	11.2	48	
56	35.4	35.1	32.2	24.9	20.1	34.6	33.5	26.7	20.1	15.7	30.6	25.9	20.5	15.2	11.2	56	
64	30.5	30.5	30.0	24.9	19.6	30.0	29.9	26.0	19.9	15.7	27.0	24.0	20.5	15.2	11.2	64	
72	26.5	26.5	26.5	24.0	19.6	26.1	26.1	23.9	19.8	15.7	23.4	21.7	19.9	15.2	11.2	72	
80	23.6	23.4	23.6	21.7	19.6	22.9	22.9	21.4	19.8	15.6	20.5	19.0	18.3	15.2	11.2	80	
88	20.9	20.9	20.9	19.4	19.1	20.3	20.3	19.0	18.8	15.2	18.0	16.7	16.8	15.1	11.2	88	
96	18.9	18.9	18.7	17.5	17.5	18.2	18.2	16.9	16.9	15.2	16.0	14.8	14.9	14.3	11.2	96	
104	17.0	17.0	17.0	15.9	15.9	16.3	16.3	15.2	15.0	14.8	14.1	13.2	13.2	13.0	11.2	104	
112	15.6	15.6	15.4	14.5	14.5	14.5	14.5	13.6	13.6	13.6	12.7	11.8	11.6	11.6	11.2	112	
120	14.2	14.2	14.1	13.2	13.2	13.1	13.1	12.1	12.1	12.1	11.1	10.5	10.3	10.3	10.3	120	
128	13.0	13.0	13.0	12.1	12.1	11.8	11.8	11.0	11.0	11.0	9.9	9.3	9.3	9.3	9.3	128	
136	11.9	11.9	11.8	11.0	11.0	10.6	10.6	9.9	9.9	9.9	8.8	8.3	8.2	8.2	8.3	136	
144	10.9	10.6	10.2	10.0	9.8	9.5	9.5	8.9	8.9	8.7	8.0	7.3	7.3	7.3	7.3	144	
152	9.6	9.3	9.1	8.9	8.5	8.7	8.5	8.0	7.8	7.8	7.2	6.5	6.5	6.5	6.5	152	
160	-	-	-	-	-	7.8	7.8	7.1	7.1	7.1	6.4	5.8	5.8	5.8	5.8	160	
168	-	-	-	-	-	-	-	-	-	-	5.6	5.2	5.2	5.2	5.2	168	
176	-	-	-	-	-	-	-	-	-	-	4.9	4.5	4.5	4.5	4.5	176	
1)	3.7	3.7	3.7	3.7	3.7	-	-	-	-	-	-	-	-	-	-	1)	

1) Capacities with horizontal boom

Operation

HA

77,200 lb + 33,100 lb		19.7 ft					32.2 ft/s					360°					ASME B30.5	
		42.3 ft					56.1 ft					70.2 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
10	336.5**	304.6*	218.9	163.5	127.9	328.5**	271.6	199.6	152.7	121.1	286.6	241.0	181.5	-	-	10		
12	300.3*	292.4*	212.8	159.5	125.2	299.2*	263.6	194.5	149.3	118.6	271.8	233.9	177.3	138.6	-	12		
14	269.8	269.3	207.0	155.9	122.6	269.3	256.1	189.7	146.1	116.3	253.0	222.1	173.3	135.7	110.0	14		
16	244.9	244.1	201.3	152.2	120.2	244.1	241.9	185.0	142.8	114.2	234.2	214.5	168.8	132.9	107.8	16		
18	223.5	222.4	195.8	148.7	117.8	222.5	221.3	180.6	139.9	112.0	216.9	207.0	165.0	130.2	105.8	18		
20	202.6	201.5	189.3	145.2	115.3	201.7	200.4	176.2	137.1	109.9	199.6	197.2	161.2	127.7	103.7	20		
24	166.2	165.3	164.2	138.0	110.1	167.0	166.2	163.2	131.5	106.0	162.9	161.8	152.9	122.9	99.8	24		
28	139.3	138.6	137.3	129.7	104.3	140.5	139.4	137.9	125.5	102.1	139.0	137.7	135.6	117.3	96.5	28		
32	114.3	113.6	112.2	108.2	88.3	115.5	114.5	113.5	111.6	98.2	114.1	113.0	111.1	108.7	93.2	32		
36	-	-	-	-	-	98.4	97.4	96.3	94.9	88.9	96.2	95.8	95.0	94.0	86.2	36		
40	-	-	-	-	-	82.1	81.2	80.3	79.3	78.2	82.3	81.4	80.1	79.0	77.7	40		
48	-	-	-	-	-	-	-	-	-	-	63.9	63.8	63.0	62.1	61.3	48		
56	-	-	-	-	-	-	-	-	-	-	50.9	50.5	50.0	49.2	48.7	56		
1)	48.1	48.1	48.1	48.1	48.1	35.1	35.1	35.1	35.1	35.1	26.9	26.9	26.9	26.9	26.9	1)		

		84.0 ft					98.1 ft					111.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
12	231.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	
14	220.3	192.7	145.9	-	-	-	-	-	-	-	-	-	-	-	-	-	14	
16	208.6	184.8	145.9	115.3	-	181.9	-	-	-	-	-	-	-	-	-	-	16	
18	195.7	179.3	145.9	115.3	95.0	174.4	143.7	114.4	-	-	-	-	-	-	-	-	18	
20	182.7	175.7	145.5	115.3	95.0	166.8	143.7	114.4	91.1	74.5	138.2	115.5	84.7	-	-	20		
24	155.7	153.7	138.8	114.0	93.7	147.1	139.9	113.5	91.1	74.5	131.4	115.5	84.7	66.8	55.5	24		
28	130.0	129.1	126.8	110.0	91.4	123.6	122.0	109.2	91.1	74.5	119.0	112.9	84.7	66.8	54.5	28		
32	113.1	111.8	109.7	105.1	88.8	106.9	106.5	103.8	91.1	74.5	102.5	101.0	84.7	66.8	54.0	32		
36	96.4	95.3	93.6	91.9	84.5	95.3	94.5	93.0	86.2	74.5	89.7	88.4	80.8	66.8	54.0	36		
40	81.0	80.8	80.5	80.0	79.1	83.3	82.3	81.0	79.5	73.4	78.2	77.1	75.4	66.3	54.0	40		
48	64.2	63.5	62.5	61.5	60.5	62.8	62.2	61.0	60.0	58.9	61.1	60.1	58.9	57.6	52.3	48		
56	50.6	50.1	49.3	48.6	47.9	49.4	48.9	48.0	47.1	46.2	47.6	47.0	46.3	46.4	44.6	56		
64	41.1	40.7	40.2	39.5	38.9	40.0	39.4	38.7	38.0	37.5	40.9	40.5	40.0	39.3	38.6	64		
72	34.3	33.9	33.4	33.0	32.5	34.0	34.0	33.8	33.8	33.4	34.3	33.9	33.2	32.8	32.1	72		
80	-	-	-	-	-	30.2	30.0	29.5	29.1	28.5	29.0	28.6	28.2	27.6	27.1	80		
88	-	-	-	-	-	17.0	17.0	16.5	16.5	16.5	24.8	24.6	24.2	23.7	23.3	88		
96	-	-	-	-	-	-	-	-	-	-	21.5	21.3	21.0	20.5	20.2	96		
104	-	-	-	-	-	-	-	-	-	-	16.2	15.9	15.8	15.8	15.8	104		
1)	20.9	20.9	20.9	20.9	20.9	16.8	16.8	16.8	16.8	16.8	13.0	13.0	13.0	13.0	13.0	1)		

* Heavy lift sheave required

** Heavy lift sheave and 7 sheaves hook block required

1) Capacities with horizontal boom

Operation

HA

77,200 lb + 33,100 lb		19.7 ft					32.2 ft/s					360°					ASME B30.5
		126.0 ft					134.8 ft					148.6 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft	1,000 lb															ft	
24	91.7	83.8	67.5	-	-	-	-	-	-	-	-	-	-	-	-	24	
28	81.2	79.0	67.0	52.9	42.8	74.8	67.9	50.7	-	-	-	-	-	-	-	28	
32	73.4	72.4	65.4	52.9	42.8	67.0	65.2	50.7	41.0	-	62.9	54.8	-	-	-	32	
36	68.5	68.0	63.3	52.9	42.8	60.8	60.3	50.7	40.1	33.3	57.3	52.6	40.3	32.0	-	36	
40	63.7	63.7	61.1	52.8	42.8	55.1	55.1	50.3	39.1	33.3	52.0	50.1	40.1	32.0	26.0	40	
48	56.1	56.1	55.9	51.4	42.8	46.5	46.3	44.6	39.0	33.2	43.8	42.8	39.5	31.7	25.9	48	
56	48.6	48.2	47.5	45.8	42.1	39.5	39.5	38.6	37.6	32.3	37.4	36.5	36.0	31.0	25.6	56	
64	39.9	39.2	38.4	37.6	36.6	34.7	34.2	34.1	33.4	31.1	32.3	31.6	31.5	29.6	24.9	64	
72	32.8	32.3	31.7	30.8	30.1	31.6	30.7	30.7	30.7	29.6	28.1	27.4	27.4	27.2	24.3	72	
80	27.5	27.1	26.4	25.8	25.9	27.9	27.5	26.9	26.2	25.6	24.9	24.5	24.4	24.3	22.4	80	
88	24.0	24.0	23.5	23.4	23.3	23.7	23.4	22.8	22.2	21.6	22.2	22.2	22.2	21.8	20.6	88	
96	21.7	21.5	21.1	20.7	20.3	20.4	19.9	19.4	19.0	18.5	20.1	19.9	19.5	19.0	18.5	96	
104	19.1	18.9	18.4	18.2	17.7	17.5	17.1	16.7	16.7	16.7	17.5	17.3	16.8	16.2	15.8	104	
112	14.7	14.4	14.2	14.0	13.6	15.4	15.4	15.4	15.3	15.3	15.1	14.9	14.4	14.0	13.6	112	
120	-	-	-	-	-	14.1	14.0	13.9	13.7	13.5	13.2	12.8	12.6	12.5	11.8	120	
128	-	-	-	-	-	12.8	12.7	12.4	12.2	12.0	11.5	11.5	11.5	11.2	10.7	128	
136	-	-	-	-	-	-	-	-	-	-	10.5	10.5	10.5	10.5	9.7	136	
144	-	-	-	-	-	-	-	-	-	-	9.3	9.1	9.1	8.9	8.6	144	
1)	9.9	9.9	9.9	9.9	9.9	8.8	8.8	8.8	8.8	8.8	6.2	6.2	6.2	6.2	6.2	1)	

		165.7 ft					181.1 ft					196.9 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft	1,000 lb															ft	
36	51.2	44.9	-	-	-	-	-	-	-	-	-	-	-	-	-	36	
40	48.2	44.2	32.6	25.7	20.7	44.2	37.5	26.7	20.1	-	-	-	-	-	-	40	
48	41.5	40.1	32.6	24.9	20.7	39.5	36.6	26.7	20.1	15.7	33.3	27.6	20.5	15.2	11.2	48	
56	35.4	35.1	32.2	24.9	20.1	34.6	33.5	26.7	20.1	15.7	30.6	25.9	20.5	15.2	11.2	56	
64	30.5	30.5	30.0	24.9	19.6	30.0	29.9	26.0	19.9	15.7	27.0	24.0	20.5	15.2	11.2	64	
72	26.5	26.5	26.5	24.0	19.6	26.1	26.1	23.9	19.8	15.7	23.4	21.7	19.9	15.2	11.2	72	
80	23.6	23.4	23.6	21.7	19.6	22.9	22.9	21.4	19.8	15.6	20.5	19.0	18.3	15.2	11.2	80	
88	20.9	20.9	20.9	19.4	19.1	20.3	20.3	19.0	18.8	15.2	18.0	16.7	16.8	15.1	11.2	88	
96	18.9	18.9	18.7	17.5	17.3	18.2	18.2	16.9	16.9	15.2	16.0	14.8	14.9	14.3	11.2	96	
104	17.0	16.6	16.2	15.7	15.1	16.1	15.8	15.2	14.6	13.9	14.1	13.2	13.2	13.0	11.2	104	
112	14.6	14.4	13.8	13.3	12.9	13.8	13.5	12.9	12.5	12.5	12.7	11.8	11.6	11.6	11.2	112	
120	12.6	12.3	11.9	11.5	11.1	12.1	12.1	11.2	11.2	11.1	11.1	10.5	10.3	10.3	10.0	120	
128	10.8	10.6	10.2	9.9	9.5	10.9	10.8	10.1	9.9	9.5	9.9	9.3	9.1	8.8	8.4	128	
136	9.3	9.1	8.9	8.5	8.2	9.4	9.2	8.9	8.5	8.2	8.5	8.2	7.8	7.4	6.9	136	
144	8.0	8.0	8.0	7.5	7.5	8.2	8.0	7.6	7.3	6.9	7.1	6.9	6.5	6.2	5.8	144	
152	6.9	6.7	6.5	6.3	6.1	6.9	6.7	6.5	6.2	5.8	6.0	5.8	5.4	5.1	4.7	152	
160	-	-	-	-	-	5.9	5.8	5.5	5.3	5.0	5.0	4.7	4.5	4.2	3.9	160	
168	-	-	-	-	-	-	-	-	-	-	4.0	3.9	3.6	3.4	3.2	168	
176	-	-	-	-	-	-	-	-	-	-	3.2	3.2	3.0	2.7	2.5	176	
1)	3.7	3.7	3.7	3.7	3.7	-	-	-	-	-	-	-	-	-	-	1)	

1) Capacities with horizontal boom

Operation

HA

55,100 lb + 33,100 lb		19.7 ft					32.2 ft/s					360°					ASME B30.5	
		42.3 ft					56.1 ft					70.2 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
10	331.0**	304.6*	218.9	163.5	127.9	327.9**	271.6	199.6	152.7	121.1	286.6	241.0	181.5	-	-	10		
12	294.8*	290.7*	212.8	159.5	125.2	294.0*	263.6	194.5	149.3	118.6	271.8	233.9	177.3	138.6	-	12		
14	264.9	263.8	207.0	155.9	122.6	264.9	256.1	189.7	146.1	116.3	253.0	222.1	173.3	135.7	110.0	14		
16	239.7	238.6	201.3	152.2	120.2	238.8	237.7	185.0	142.8	114.2	234.2	214.5	168.8	132.9	107.8	16		
18	214.5	213.5	195.7	148.7	117.8	213.7	212.4	180.6	139.9	112.0	207.1	197.2	165.0	130.2	105.8	18		
20	190.2	189.4	188.1	145.2	115.3	191.3	190.2	175.4	137.1	109.9	183.0	182.8	160.6	127.7	103.7	20		
24	154.6	153.8	152.5	137.4	110.1	155.8	154.8	153.3	131.5	106.0	145.7	144.1	141.3	122.9	99.8	24		
28	122.7	121.7	120.2	118.5	104.3	124.0	123.5	122.5	118.4	102.1	119.6	118.9	117.8	114.0	96.5	28		
32	96.9	96.2	95.0	93.8	88.3	99.8	98.9	97.5	96.1	92.9	100.1	99.0	97.3	95.7	91.3	32		
36	-	-	-	-	-	83.2	82.5	81.3	80.2	79.0	83.6	82.7	81.3	80.0	78.6	36		
40	-	-	-	-	-	70.8	70.2	69.3	68.4	67.4	71.9	71.2	70.2	69.1	68.0	40		
48	-	-	-	-	-	-	-	-	-	-	54.3	53.7	52.9	52.1	51.3	48		
56	-	-	-	-	-	-	-	-	-	-	42.6	42.2	41.6	41.1	40.4	56		
1)	48.1	48.1	48.1	48.1	48.1	35.1	35.1	35.1	35.1	35.1	26.9	26.9	26.9	26.9	26.9	1)		

		84.0 ft					98.1 ft					111.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
12	231.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	
14	220.3	192.7	145.9	-	-	-	-	-	-	-	-	-	-	-	-	-	14	
16	208.6	184.8	145.9	115.3	-	181.9	-	-	-	-	-	-	-	-	-	-	16	
18	188.6	174.6	145.9	115.3	95.0	170.8	143.7	114.4	-	-	-	-	-	-	-	-	18	
20	167.0	164.7	145.5	115.3	95.0	158.1	142.5	114.4	91.1	74.5	137.7	115.5	84.7	-	-	20		
24	138.8	137.1	134.4	114.0	93.7	127.0	125.4	113.5	91.1	74.5	122.3	113.1	84.7	66.8	55.5	24		
28	114.1	112.6	110.3	105.8	91.4	110.7	109.1	105.3	91.1	74.5	101.9	100.3	84.7	66.8	54.5	28		
32	96.9	96.7	96.2	94.2	88.8	93.9	92.5	90.7	87.2	74.5	86.8	85.2	81.5	66.8	54.0	32		
36	84.4	84.0	83.0	81.4	78.7	81.6	80.5	78.9	77.4	70.8	75.6	74.3	72.5	64.8	54.0	36		
40	71.7	71.0	69.7	68.4	67.3	70.4	69.5	68.2	66.9	65.4	65.6	64.5	63.0	61.5	53.6	40		
48	53.9	53.3	52.4	51.6	50.6	52.8	52.0	51.1	50.1	48.9	51.9	51.4	51.3	50.4	47.2	48		
56	42.3	41.8	41.1	40.4	39.6	42.1	41.8	41.4	40.9	40.6	42.7	42.1	41.3	40.4	39.4	56		
64	34.1	33.7	33.2	32.9	32.9	35.5	35.0	34.5	33.8	33.2	34.4	33.9	33.2	32.5	31.8	64		
72	29.8	29.4	29.2	28.8	28.3	29.2	29.0	28.6	27.9	27.5	28.1	27.7	27.2	26.6	25.9	72		
80	-	-	-	-	-	24.8	24.5	24.1	23.7	23.3	23.7	23.7	23.3	23.2	23.1	80		
88	-	-	-	-	-	17.0	17.0	16.5	16.5	16.5	21.3	21.2	20.7	20.4	19.9	88		
96	-	-	-	-	-	-	-	-	-	-	18.5	18.2	17.9	17.6	17.3	96		
104	-	-	-	-	-	-	-	-	-	-	16.0	15.8	15.6	15.4	15.0	104		
1)	20.9	20.9	20.9	20.9	20.9	16.8	16.8	16.8	16.8	16.8	13.0	13.0	13.0	13.0	13.0	1)		

* Heavy lift sheave required

** Heavy lift sheave and 7 sheaves hook block required

1) Capacities with horizontal boom

Operation

HA




55,100 lb + 33,100 lb		19.7 ft					32.2 ft/s					360°					ASME B30.5
		126.0 ft					134.8 ft					148.6 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft	1,000 lb															ft	
24	91.7	83.8	67.5	-	-	-	-	-	-	-	-	-	-	-	-	-	24
28	81.2	79.0	67.0	52.9	42.8	74.8	67.9	50.7	-	-	-	-	-	-	-	-	28
32	73.4	72.4	65.4	52.9	42.8	67.0	65.2	50.7	41.0	-	62.9	54.8	-	-	-	-	32
36	68.5	68.0	63.3	52.9	42.8	60.8	60.3	50.7	40.1	33.3	57.3	52.6	40.3	32.0	-	-	36
40	63.5	63.4	60.7	52.8	42.8	55.1	55.1	50.3	39.1	33.3	52.0	50.1	40.1	32.0	26.0	-	40
48	51.8	51.0	49.8	48.5	42.3	46.3	45.9	44.1	38.7	33.2	43.8	42.8	39.5	31.7	25.9	-	48
56	41.0	40.3	39.3	38.3	37.3	38.8	37.9	37.7	35.4	32.3	36.8	36.0	35.0	31.0	25.6	-	56
64	32.8	32.1	31.4	31.1	30.7	33.1	32.3	31.8	30.8	29.4	31.2	30.5	30.2	29.1	24.9	-	64
72	28.7	28.3	27.6	27.0	26.3	27.0	26.6	25.9	25.0	24.8	27.0	26.7	25.9	25.2	23.8	-	72
80	24.1	23.7	23.2	22.6	22.1	22.5	22.1	22.1	22.0	21.9	22.7	22.3	21.5	21.1	20.2	-	80
88	20.5	20.1	19.6	19.2	18.6	19.9	19.8	19.6	19.1	18.5	19.0	18.9	18.6	18.2	17.4	-	88
96	17.4	17.1	16.7	16.4	16.4	17.3	17.1	16.7	16.2	15.7	16.6	16.5	15.9	15.9	15.0	-	96
104	15.2	14.9	14.9	14.7	14.4	14.8	14.6	14.2	13.9	13.5	14.5	14.5	14.3	13.9	13.4	-	104
112	10.9	10.7	10.5	10.3	9.9	12.9	12.7	12.3	11.8	11.6	12.9	12.7	12.3	12.0	11.6	-	112
120	-	-	-	-	-	11.1	10.9	10.8	10.8	10.2	11.1	10.9	10.6	10.4	10.0	-	120
128	-	-	-	-	-	9.6	9.5	9.3	9.0	8.8	9.7	9.6	9.3	8.9	8.7	-	128
136	-	-	-	-	-	-	-	-	-	-	8.4	8.2	8.0	7.9	7.7	-	136
144	-	-	-	-	-	-	-	-	-	-	6.4	6.4	6.2	6.0	5.8	-	144
1)	9.9	9.9	9.9	9.9	9.9	8.8	8.8	8.8	8.8	8.8	6.2	6.2	6.2	6.2	6.2	-	1)

		165.7 ft					181.1 ft					196.9 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft	1,000 lb															ft	
36	51.2	44.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36
40	48.2	44.2	32.6	25.7	20.7	44.2	37.5	26.7	20.1	-	-	-	-	-	-	-	40
48	41.5	40.1	32.6	24.9	20.7	39.5	36.6	26.7	20.1	15.7	33.3	27.6	20.5	15.2	11.2	-	48
56	35.4	35.1	32.2	24.9	20.1	34.6	33.5	26.7	20.1	15.7	30.6	25.9	20.5	15.2	11.2	-	56
64	30.3	29.8	28.8	24.9	19.6	30.0	29.7	26.0	19.9	15.7	27.0	24.0	20.5	15.2	11.2	-	64
72	25.9	25.9	25.2	23.4	19.6	25.7	25.0	23.9	19.8	15.7	23.4	21.7	19.9	15.2	11.2	-	72
80	22.1	21.7	21.0	20.2	19.1	21.2	20.8	19.9	19.1	15.6	20.5	19.0	18.3	15.2	11.2	-	80
88	18.5	18.1	17.4	16.8	16.1	18.1	17.8	16.9	16.3	15.2	17.7	16.7	16.3	14.8	11.2	-	88
96	15.6	15.1	14.9	14.0	13.9	15.6	15.1	14.6	14.0	13.4	14.7	14.3	13.5	12.9	11.2	-	96
104	13.4	13.4	13.2	12.5	12.3	13.1	12.8	12.2	11.7	11.1	12.2	11.8	11.1	10.6	9.9	-	104
112	12.0	11.8	11.4	10.9	10.5	11.1	10.7	10.3	9.8	9.2	10.0	9.6	9.2	8.5	8.1	-	112
120	10.4	10.2	9.8	9.4	8.9	9.3	8.9	8.5	8.1	7.6	8.3	8.0	7.6	7.0	6.5	-	120
128	8.9	8.7	8.3	8.0	7.6	7.8	7.5	7.2	6.7	6.3	6.8	6.5	6.1	5.6	5.2	-	128
136	7.6	7.4	7.1	6.9	6.4	6.5	6.2	5.8	5.5	5.1	5.5	5.2	4.9	4.4	4.0	-	136
144	6.4	6.2	6.0	5.8	5.5	5.3	5.1	4.7	4.5	4.2	4.2	4.0	3.8	3.4	2.9	-	144
152	4.3	4.1	3.9	3.6	3.4	4.3	4.1	3.9	3.6	3.2	3.4	3.2	2.8	-	-	-	152
160	-	-	-	-	-	3.5	3.3	3.1	2.8	2.6	-	-	-	-	-	-	160
1)	3.7	3.7	3.7	3.7	3.7	-	-	-	-	-	-	-	-	-	-	-	1)

1) Capacities with horizontal boom

Operation

HA

33,100 lb +  33,100 lb		 19.7 ft					 32.2 ft/s					360°					ASME B30.5				
		42.3 ft					56.1 ft					70.2 ft									
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°					
ft	1,000 lb															ft					
10	324.5**	304.5*	218.9	163.5	127.9	324.4**	271.6	199.6	152.7	121.1	286.6	241.0	181.5	-	-	10					
12	289.6	288.5	212.8	159.5	125.2	288.5	263.6	194.5	149.3	118.6	271.8	233.9	177.3	138.6	-	12					
14	258.7	257.6	207.0	155.9	122.6	257.6	251.4	189.7	146.1	116.3	243.6	222.1	173.3	135.7	110.0	14					
16	227.0	226.0	201.3	152.2	120.2	226.2	224.9	185.0	142.8	114.2	208.1	205.3	168.8	132.9	107.8	16					
18	201.2	200.3	189.8	148.7	117.8	198.9	197.2	177.1	139.9	112.0	181.6	179.1	160.5	130.2	105.8	18					
20	177.5	176.6	175.4	145.2	115.3	171.5	169.3	166.5	137.1	109.9	154.9	152.8	149.7	127.7	103.7	20					
24	136.1	134.9	133.0	130.3	110.1	134.4	133.0	130.7	126.4	106.0	125.0	123.6	121.2	118.0	99.8	24					
28	101.5	100.7	99.3	97.8	96.1	105.2	104.0	102.3	100.7	96.0	101.6	100.3	98.3	97.0	94.3	28					
32	79.6	79.0	78.0	77.0	75.8	82.8	81.9	80.7	79.9	78.9	85.1	84.4	83.3	82.1	80.6	32					
36	-	-	-	-	-	70.4	69.6	68.7	67.7	66.6	71.6	70.8	69.7	68.5	67.4	36					
40	-	-	-	-	-	58.3	57.6	57.0	56.1	55.2	59.3	58.7	57.8	56.8	55.9	40					
48	-	-	-	-	-	-	-	-	-	-	44.3	43.9	43.1	42.4	41.6	48					
56	-	-	-	-	-	-	-	-	-	-	34.6	34.4	34.2	33.8	33.5	56					
1)	48.1	48.1	48.1	48.1	48.1	35.1	35.1	35.1	35.1	35.1	26.9	26.9	26.9	26.9	26.9	1)					

		84.0 ft					98.1 ft					111.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
12	231.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	
14	215.1	192.7	145.9	-	-	-	-	-	-	-	-	-	-	-	-	-	14	
16	188.6	184.8	145.9	115.3	-	172.0	-	-	-	-	-	-	-	-	-	-	16	
18	167.6	165.0	144.6	115.3	95.0	150.9	139.1	114.4	-	-	-	-	-	-	-	-	18	
20	145.8	143.6	140.6	115.2	95.0	135.6	134.2	114.2	91.1	74.5	125.2	114.4	84.7	-	-	20		
24	116.4	116.0	113.4	108.6	93.7	111.1	109.4	107.0	91.1	74.5	101.3	99.4	84.7	66.8	55.5	24		
28	98.8	97.5	95.6	93.7	88.6	91.8	90.4	88.3	85.3	74.5	83.9	82.4	79.4	66.8	54.5	28		
32	83.1	82.0	80.4	78.8	77.2	77.4	76.2	74.4	72.6	70.0	71.0	69.7	67.8	64.3	54.0	32		
36	70.6	69.7	68.4	66.9	65.6	67.1	66.1	64.5	62.9	61.5	64.1	63.3	61.4	57.9	52.1	36		
40	59.1	58.5	57.4	56.1	55.0	57.8	56.9	55.5	54.2	52.8	57.6	56.7	55.4	54.1	50.2	40		
48	44.0	43.4	42.6	41.8	41.6	45.7	45.1	44.3	43.3	42.4	44.5	43.8	42.8	41.8	40.7	48		
56	35.8	35.6	35.0	34.4	33.8	35.6	35.1	34.4	33.7	33.0	34.5	33.9	33.1	32.3	31.7	56		
64	29.2	28.8	28.4	27.9	27.2	28.6	28.1	27.5	27.0	26.3	28.6	28.3	27.7	27.2	26.8	64		
72	23.9	23.7	23.3	22.8	22.6	23.3	23.2	23.2	22.8	22.3	23.7	23.3	22.8	22.4	21.9	72		
80	-	-	-	-	-	20.2	20.0	19.6	19.2	18.9	20.0	19.6	19.1	18.7	18.3	80		
88	-	-	-	-	-	16.8	16.8	16.3	16.3	16.2	16.7	16.5	16.1	15.7	15.4	88		
96	-	-	-	-	-	-	-	-	-	-	14.2	14.0	13.7	13.4	13.0	96		
104	-	-	-	-	-	-	-	-	-	-	12.1	11.9	11.7	11.5	11.2	104		
1)	20.9	20.9	20.9	20.9	20.9	16.5	16.3	16.3	16.1	15.7	12.3	12.1	11.9	11.7	11.7	1)		

* Heavy lift sheave required

** Heavy lift sheave and 7 sheaves hook block required

1) Capacities with horizontal boom

Operation

HA




33,100 lb + 33,100 lb		19.7 ft					32.2 ft/s					360°					ASME B30.5	
		126.0 ft					134.8 ft					148.6 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
24	91.5	83.8	67.5	-	-	-	-	-	-	-	-	-	-	-	-	-	24	
28	79.1	76.7	67.0	52.9	42.8	73.9	67.9	50.7	-	-	-	-	-	-	-	-	28	
32	70.1	68.7	65.2	52.9	42.8	63.4	61.7	50.7	41.0	-	60.9	54.8	-	-	-	-	32	
36	61.1	60.0	58.4	51.5	42.8	55.9	54.9	48.8	40.1	33.3	53.2	50.2	40.3	32.0	-	-	36	
40	53.1	52.2	50.7	49.2	42.5	49.8	48.1	46.3	39.1	33.3	47.9	46.8	39.9	32.0	26.0	-	40	
48	41.8	41.0	39.8	38.6	37.3	41.1	40.2	38.9	36.2	32.9	38.7	38.4	36.2	31.7	25.9	-	48	
56	34.6	34.3	33.6	32.7	31.2	33.0	32.3	31.6	31.0	29.3	32.4	31.8	31.3	29.6	25.6	-	56	
64	28.0	27.5	26.8	26.1	25.6	27.5	27.2	26.7	25.9	25.1	26.9	26.4	25.8	24.9	23.4	-	64	
72	23.0	22.6	22.3	21.7	21.3	22.8	22.4	21.7	21.0	20.4	22.1	21.9	21.7	21.0	19.3	-	72	
80	19.3	19.1	18.7	18.1	17.6	18.9	18.5	17.8	17.7	16.7	18.9	18.5	18.0	17.3	16.7	-	80	
88	16.3	16.0	15.6	15.2	14.7	16.0	15.9	15.7	15.4	14.8	15.8	15.4	15.0	14.4	13.9	-	88	
96	13.7	13.4	13.1	12.8	12.3	14.0	13.7	13.3	13.0	12.6	13.2	12.9	12.4	12.0	11.6	-	96	
104	11.7	11.5	11.0	10.8	10.6	11.9	11.7	11.3	11.0	10.6	11.1	10.8	10.4	9.9	9.7	-	104	
112	7.4	7.2	7.0	6.6	6.3	10.0	9.8	9.6	9.4	9.0	9.4	9.0	8.7	8.3	8.1	-	112	
120	-	-	-	-	-	8.6	8.5	8.3	7.9	7.7	7.8	7.6	7.2	7.0	6.7	-	120	
128	-	-	-	-	-	6.4	6.4	6.2	5.9	5.7	6.5	6.4	6.2	5.9	5.6	-	128	
136	-	-	-	-	-	-	-	-	-	-	5.5	5.3	5.1	4.9	4.8	-	136	
144	-	-	-	-	-	-	-	-	-	-	3.8	3.6	3.3	3.3	3.1	-	144	
1)	9.0	8.8	8.8	8.6	8.4	7.7	7.5	7.5	7.3	7.1	5.1	4.9	4.9	4.6	4.6	-	1)	

		165.7 ft					181.1 ft					196.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
36	50.0	44.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	
40	45.5	43.8	32.6	25.7	20.7	43.9	37.4	26.7	20.1	-	-	-	-	-	-	-	40	
48	38.0	37.0	32.3	24.9	20.7	35.8	34.7	26.7	20.1	15.7	32.8	27.6	20.5	15.2	11.2	-	48	
56	30.8	29.9	28.8	24.9	20.1	29.7	28.7	25.5	20.1	15.7	27.8	25.7	20.5	15.2	11.2	-	56	
64	25.3	24.6	24.1	22.4	19.6	24.8	24.1	22.4	19.9	15.7	22.7	21.9	20.0	15.2	11.2	-	64	
72	21.5	21.5	20.8	19.2	17.7	20.6	19.9	19.0	17.9	15.7	18.6	17.9	16.8	15.2	11.2	-	72	
80	18.2	17.6	17.0	16.3	15.6	16.9	16.5	15.6	15.0	14.1	15.4	14.8	13.9	13.0	11.1	-	80	
88	15.0	14.5	14.1	13.4	12.9	13.9	13.4	12.8	12.1	11.3	12.6	12.2	11.3	10.5	9.6	-	88	
96	12.4	12.1	11.5	11.0	10.6	11.3	10.9	10.4	9.7	9.2	10.2	9.8	9.2	8.4	7.6	-	96	
104	10.2	10.0	9.5	9.1	8.6	9.1	8.8	8.2	7.7	7.3	8.2	7.7	7.3	6.6	5.9	-	104	
112	8.5	8.3	7.8	7.4	7.0	7.4	7.0	6.5	6.1	5.7	6.3	6.1	5.4	5.0	4.6	-	112	
120	7.0	6.7	6.4	6.1	5.7	5.9	5.6	5.2	4.8	4.4	5.0	4.5	4.1	3.7	3.2	-	120	
128	5.7	5.5	5.2	4.8	4.6	4.6	4.4	4.0	3.5	3.3	3.6	3.3	2.9	-	-	-	128	
136	4.7	4.4	4.1	3.9	3.5	3.5	3.3	2.9	2.6	-	2.4	-	-	-	-	-	136	
144	3.6	3.6	3.1	2.9	2.7	2.5	2.3	-	-	-	-	-	-	-	-	-	144	
1)	2.4	2.4	2.2	2.2	-	-	-	-	-	-	-	-	-	-	-	-	1)	

1) Capacities with horizontal boom

Operation

HA

11,000 lb +  33,100 lb		 19.7 ft					 32.2 ft/s					360°					ASME B30.5				
		42.3 ft					56.1 ft					70.2 ft									
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°					
ft	1,000 lb															ft					
10	319.0**	304.0*	218.9	163.5	127.9	317.9*	271.6	199.6	152.7	121.1	286.0	241.0	181.5	-	-	10					
12	282.4	281.3	212.8	159.5	125.2	281.3	263.6	194.5	149.3	118.6	254.0	233.5	177.3	138.6	-	12					
14	244.8	243.7	207.0	155.9	122.6	236.7	234.6	189.7	146.1	116.3	209.4	206.2	173.3	135.7	110.0	14					
16	211.8	210.8	201.3	152.2	120.2	194.5	192.0	181.8	142.8	114.2	172.6	170.9	165.8	132.9	107.8	16					
18	180.8	179.5	175.9	148.7	117.8	163.9	162.4	158.9	139.3	112.0	150.9	148.8	145.6	128.1	105.8	18					
20	151.0	149.3	146.7	142.5	115.2	140.5	138.8	136.2	133.6	109.9	128.5	126.8	124.0	121.4	103.7	20					
24	108.7	107.6	105.9	104.0	102.2	107.7	106.5	104.5	102.4	100.4	103.9	102.6	100.5	98.4	95.7	24					
28	80.4	79.5	78.3	77.0	75.7	84.7	84.2	83.5	82.1	80.6	84.3	83.1	81.5	79.8	78.1	28					
32	62.4	61.7	61.0	60.0	59.1	67.4	66.7	65.5	64.4	63.2	68.6	67.6	66.4	65.0	63.7	32					
36	-	-	-	-	-	55.7	55.0	54.1	53.1	52.2	56.9	56.1	55.1	54.0	52.9	36					
40	-	-	-	-	-	45.7	45.0	44.4	43.6	42.9	46.8	46.1	45.4	44.9	44.9	40					
48	-	-	-	-	-	-	-	-	-	-	35.5	35.1	34.7	34.1	33.5	48					
56	-	-	-	-	-	-	-	-	-	-	27.6	27.3	26.8	26.3	25.8	56					
1)	48.1	48.1	48.1	48.1	48.1	33.5	33.1	32.8	32.4	32.0	22.9	22.7	22.5	22.0	21.8	1)					

		84.0 ft					98.1 ft					111.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
12	222.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	
14	189.3	182.7	145.9	-	-	-	-	-	-	-	-	-	-	-	-	-	14	
16	157.6	154.9	145.8	115.3	-	144.7	-	-	-	-	-	-	-	-	-	-	16	
18	135.8	133.5	130.3	113.3	95.0	128.0	126.0	111.5	-	-	101.2	-	-	-	-	-	18	
20	122.2	120.4	117.8	109.2	94.3	111.4	109.4	106.6	90.6	74.5	100.0	97.8	84.2	-	-	-	20	
24	96.7	95.2	93.1	90.9	88.0	88.7	87.2	84.8	82.6	73.5	82.5	81.4	75.9	66.3	55.5	-	24	
28	78.9	77.7	75.9	74.2	72.4	72.7	71.5	69.5	67.7	65.7	71.2	70.0	67.2	62.7	54.5	-	28	
32	65.9	64.9	63.3	62.0	60.4	64.1	63.3	62.0	59.8	56.6	60.2	59.1	57.5	55.9	52.7	-	32	
36	55.8	55.0	53.7	52.5	51.2	56.2	55.2	54.0	52.6	50.7	52.2	51.2	49.8	48.3	46.8	-	36	
40	48.7	48.1	47.2	46.2	45.3	48.3	47.5	46.4	45.3	44.0	45.0	44.1	42.9	42.0	40.2	-	40	
48	36.4	35.9	35.1	34.5	33.6	35.7	35.3	34.5	33.6	32.6	36.4	35.7	34.9	33.9	32.8	-	48	
56	28.0	27.7	27.0	26.5	25.8	28.4	27.9	27.3	26.7	26.1	28.1	27.6	27.0	26.2	25.3	-	56	
64	22.2	22.0	21.5	21.0	20.5	22.5	22.1	21.7	21.3	20.7	22.3	21.8	21.3	20.6	19.9	-	64	
72	17.9	17.7	17.3	16.8	16.6	18.4	17.9	17.5	17.1	16.6	17.9	17.5	17.1	16.4	16.0	-	72	
80	-	-	-	-	-	15.0	14.8	14.4	14.1	13.7	14.6	14.3	13.9	13.5	13.0	-	80	
88	-	-	-	-	-	12.5	12.3	12.1	11.7	11.4	12.0	11.8	11.4	11.0	10.6	-	88	
96	-	-	-	-	-	-	-	-	-	-	9.8	9.6	9.4	9.1	8.9	-	96	
104	-	-	-	-	-	-	-	-	-	-	8.1	8.1	7.9	7.5	7.3	-	104	
1)	16.3	16.1	15.9	15.7	15.4	11.9	11.7	11.5	11.5	11.2	8.2	8.2	7.9	7.7	7.7	-	1)	







* Heavy lift sheave required




** Heavy lift sheave and 7 sheaves hook block required

1) Capacities with horizontal boom

Operation

HA




11,000 lb +  33,100 lb		 19.7 ft					 32.2 ft/s					360°					ASME B30.5	
 		126.0 ft					134.8 ft					148.6 ft						
ft		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	ft	
		1,000 lb																
24		78.2	76.5	67.1	-	-	-	-	-	-	-	-	-	-	-	-	-	24
28		64.9	63.6	61.5	52.9	42.8	61.8	58.0	50.5	-	-	-	-	-	-	-	-	28
32		56.0	55.0	51.8	49.4	42.8	53.1	51.8	47.8	41.0	-	51.7	48.7	-	-	-	-	32
36		49.4	49.1	46.2	43.2	39.7	46.6	46.1	42.9	39.0	33.3	45.8	43.9	39.7	32.0	-	-	36
40		44.0	43.1	41.8	40.5	37.4	42.4	41.4	40.1	36.1	32.8	39.8	38.8	37.5	31.8	26.0	-	40
48		34.5	33.7	33.2	32.5	30.6	33.4	32.6	31.5	30.5	29.2	32.4	32.1	30.1	28.1	25.2	-	48
56		27.6	27.0	26.3	25.5	24.7	26.6	26.3	25.9	24.8	23.3	26.4	25.7	24.8	23.8	21.6	-	56
64		21.8	21.3	20.7	19.9	19.3	21.9	21.6	20.9	20.2	19.2	21.1	20.6	19.9	19.2	18.3	-	64
72		17.3	16.9	16.4	15.7	15.3	17.7	17.3	16.6	16.2	15.5	16.8	16.4	15.7	15.1	14.4	-	72
80		14.1	13.7	13.2	12.8	12.4	14.3	14.1	13.5	13.1	12.6	13.6	13.2	12.6	12.1	11.5	-	80
88		11.4	11.2	10.7	10.3	9.9	11.8	11.5	11.1	10.7	10.2	11.0	10.6	10.1	9.6	9.2	-	88
96		9.4	9.2	8.7	8.4	8.1	9.6	9.4	8.9	8.7	8.3	8.8	8.5	8.1	7.8	7.3	-	96
104		7.7	7.5	7.2	6.8	6.6	7.9	7.7	7.3	7.0	6.8	7.0	6.8	6.4	6.2	5.7	-	104
112		3.7	3.5	3.2	3.0	2.8	6.3	6.3	5.9	5.7	5.5	5.7	5.4	5.0	4.8	4.3	-	112
120		-	-	-	-	-	5.3	5.0	4.8	4.7	4.4	4.4	4.2	3.9	3.7	3.3	-	120
128		-	-	-	-	-	3.2	3.2	3.0	2.8	2.6	3.3	3.2	3.0	2.8	2.5	-	128
136		-	-	-	-	-	-	-	-	-	-	2.4	2.4	-	-	-	-	136
1)		5.5	5.5	5.3	5.1	5.1	4.4	4.4	4.2	4.2	4.0	2.2	-	-	-	-	-	1)

 		165.7 ft					181.1 ft					196.9 ft						
ft		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	ft	
		1,000 lb																
36		42.5	38.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36
40		38.6	36.7	32.2	25.7	20.7	35.5	34.2	26.6	20.1	-	-	-	-	-	-	-	40
48		30.5	29.6	28.3	24.1	20.7	27.7	26.8	24.9	20.1	15.7	25.4	24.3	20.3	15.2	11.2	-	48
56		24.3	23.7	22.6	21.4	19.7	22.0	21.2	20.0	18.5	15.7	19.9	19.0	17.8	15.0	11.2	-	56
64		19.8	19.1	18.2	17.3	16.4	17.6	16.9	15.8	14.9	13.8	15.6	14.9	13.8	12.6	10.9	-	64
72		16.0	15.5	14.6	14.0	13.1	14.0	13.5	12.6	11.7	10.9	12.2	11.5	10.6	9.8	8.7	-	72
80		12.8	12.4	11.7	11.1	10.4	11.3	10.7	10.0	9.1	8.3	9.6	8.9	8.0	7.2	6.3	-	80
88		10.2	9.8	9.2	8.8	8.1	9.0	8.5	7.7	7.1	6.4	7.4	6.9	6.0	5.3	4.5	-	88
96		8.1	7.6	7.2	6.7	6.2	7.0	6.5	6.0	5.3	4.7	5.4	5.0	4.2	3.6	2.9	-	96
104		6.4	5.9	5.5	5.0	4.8	5.1	4.8	4.4	3.9	3.3	3.9	3.5	2.8	-	-	-	104
112		4.8	4.6	4.1	3.9	3.5	3.7	3.5	-	-	-	-	-	-	-	-	-	112
120		3.5	3.3	3.1	2.7	-	-	-	-	-	-	-	-	-	-	-	-	120
128		2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	128
1)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1)

1) Capacities with horizontal boom

Operation

HA

0 lb +  33,100 lb		 19.7 ft					 32.2 ft/s					360°					ASME B30.5	
		42.3 ft					56.1 ft					70.2 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
10	315.7*	303.6*	218.9	163.5	127.9	314.6*	271.6	199.6	152.7	121.1	282.9	241.0	181.5	-	-	10		
12	277.3	275.9	212.8	159.5	125.2	270.3	255.6	194.5	149.3	118.6	235.2	225.0	177.3	138.6	-	12		
14	235.9	234.3	207.0	155.9	122.6	214.4	211.3	189.7	146.1	116.3	184.7	182.5	171.5	135.7	110.0	14		
16	193.8	191.9	185.4	152.2	120.2	173.8	172.2	167.2	142.8	114.2	156.1	153.6	150.1	132.9	107.8	16		
18	160.9	159.0	155.9	140.5	117.8	147.3	145.4	142.4	131.1	112.0	133.1	130.9	128.0	120.5	105.8	18		
20	132.5	130.9	128.4	126.0	113.9	123.6	122.1	119.5	116.9	108.5	117.3	115.5	113.2	110.8	102.6	20		
24	95.2	94.1	92.4	90.8	89.0	95.3	95.0	93.9	92.0	90.2	91.4	90.0	88.1	86.2	84.1	24		
28	69.9	69.1	67.9	66.7	65.4	75.5	74.6	73.2	71.8	70.3	73.8	72.7	71.1	69.5	67.9	28		
32	53.9	53.3	52.5	51.5	50.8	58.9	58.2	57.1	55.9	54.7	60.0	59.0	57.9	56.7	55.3	32		
36	-	-	-	-	-	48.4	47.8	46.8	45.9	45.1	49.6	48.9	47.9	46.9	46.4	36		
40	-	-	-	-	-	39.4	39.0	38.1	37.5	36.8	42.0	41.4	40.7	40.1	39.2	40		
48	-	-	-	-	-	-	-	-	-	-	30.9	30.5	29.9	29.3	28.6	48		
56	-	-	-	-	-	-	-	-	-	-	23.5	23.2	22.8	22.3	21.8	56		
1)	47.8	47.4	47.0	46.3	45.6	28.4	28.2	27.8	27.6	27.1	19.2	19.2	18.7	18.5	18.3	1)		







		84.0 ft					98.1 ft					111.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
12	207.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	
14	167.1	164.2	145.9	-	-	-	-	-	-	-	-	-	-	-	-	-	14	
16	141.4	139.6	132.1	115.3	-	129.6	-	-	-	-	-	-	-	-	-	-	16	
18	125.2	123.2	117.7	107.4	94.4	112.7	110.7	104.9	-	-	99.5	-	-	-	-	-	18	
20	107.8	106.1	103.5	100.9	92.0	97.7	96.0	93.2	89.5	74.4	90.9	88.2	82.4	-	-	20		
24	84.9	83.5	81.4	79.4	77.2	78.0	77.8	73.9	71.6	69.4	75.4	73.9	70.6	64.2	55.5	24		
28	69.0	67.9	66.2	64.4	62.7	67.3	66.2	64.5	61.6	57.8	62.2	60.9	59.1	57.4	53.1	28		
32	58.5	58.3	57.4	56.4	54.3	56.6	55.5	54.1	52.8	51.2	52.3	51.7	49.7	48.0	46.4	32		
36	50.7	50.2	49.2	48.0	46.8	48.9	47.9	46.7	45.5	44.1	46.4	45.9	43.8	41.4	39.9	36		
40	42.9	42.3	41.4	40.3	39.4	41.8	41.0	39.9	38.8	37.8	40.9	40.0	39.0	37.9	36.2	40		
48	31.5	31.1	30.3	29.7	28.9	31.9	31.4	30.5	29.7	29.0	31.5	30.8	30.0	29.1	28.2	48		
56	24.0	23.6	23.1	22.5	22.0	24.6	24.2	23.5	22.8	22.2	24.2	23.6	23.0	22.2	21.6	56		
64	18.8	18.4	18.1	17.6	17.2	19.3	18.8	18.3	17.8	17.4	18.8	18.4	17.9	17.2	16.6	64		
72	14.9	14.6	14.4	14.0	13.7	15.3	15.1	14.6	14.2	13.7	14.9	14.4	14.0	13.5	13.1	72		
80	-	-	-	-	-	12.4	12.2	11.7	11.3	11.1	12.0	11.7	11.3	10.9	10.5	80		
88	-	-	-	-	-	10.1	9.9	9.6	9.3	9.1	9.6	9.4	9.1	8.6	8.4	88		
96	-	-	-	-	-	-	-	-	-	-	7.8	7.5	7.3	6.9	6.7	96		
104	-	-	-	-	-	-	-	-	-	-	6.2	6.1	5.9	5.6	5.4	104		
1)	13.4	13.2	13.0	12.8	12.6	9.5	9.5	9.3	9.0	8.8	6.2	6.2	6.0	6.0	5.7	1)		




* Heavy lift sheave required

1) Capacities with horizontal boom

Operation

HA

0 lb +  33,100 lb		 19.7 ft					 32.2 ft/s					360°					ASME B30.5
 		126.0 ft					134.8 ft					148.6 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft	1,000 lb															ft	
24	68.3	66.6	64.2	-	-	-	-	-	-	-	-	-	-	-	-	-	24
28	58.9	58.1	52.9	50.0	42.8	-	55.9	53.2	48.0	-	-	-	-	-	-	-	28
32	50.6	49.5	47.3	43.8	40.3	-	48.5	47.4	43.9	40.0	-	-	-	-	-	-	32
36	43.9	43.2	41.5	39.2	36.4	-	42.1	41.1	39.4	35.8	32.2	-	-	-	-	-	36
40	38.7	37.9	36.8	35.5	33.3	-	36.4	36.1	34.2	32.9	31.6	-	-	-	-	-	40
48	30.2	29.6	28.5	27.5	26.6	-	30.0	29.3	28.3	27.0	24.3	-	-	-	-	-	48
56	23.5	23.1	22.3	21.4	20.7	-	23.8	23.2	22.3	21.6	20.5	-	-	-	-	-	56
64	18.2	17.9	17.2	16.5	15.9	-	18.6	18.2	17.5	16.8	16.1	-	-	-	-	-	64
72	14.4	14.0	13.5	12.9	12.4	-	14.6	14.2	13.7	13.1	12.6	-	-	-	-	-	72
80	11.3	11.1	10.6	10.2	9.8	-	11.7	11.3	10.9	10.5	10.0	-	-	-	-	-	80
88	9.1	8.8	8.4	8.0	7.7	-	9.4	9.1	8.6	8.3	8.0	-	-	-	-	-	88
96	7.2	7.0	6.7	6.4	6.0	-	7.4	7.2	6.9	6.4	6.2	-	-	-	-	-	96
104	5.7	5.5	5.2	5.0	4.6	-	5.9	5.7	5.5	5.0	4.8	-	-	-	-	-	104
112	-	-	-	-	-	-	4.6	4.3	4.1	3.9	3.7	-	-	-	-	-	112
120	-	-	-	-	-	-	3.5	3.3	3.1	3.0	2.7	-	-	-	-	-	120
1)	3.7	3.7	3.5	3.5	3.3	-	2.9	2.9	2.6	2.4	2.4	-	-	-	-	-	1)

 		165.7 ft					181.1 ft					196.9 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft	1,000 lb															ft	
36	38.0	36.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36
40	32.9	32.0	30.5	25.6	20.7	-	30.1	29.0	26.3	20.1	-	-	-	-	-	-	40
48	25.6	24.8	23.7	22.4	20.0	-	23.0	22.2	20.9	19.0	15.6	-	-	-	-	-	48
56	20.1	19.5	18.5	17.5	16.4	-	18.0	17.2	16.0	15.0	13.8	-	-	-	-	-	56
64	16.0	15.5	14.6	13.7	12.8	-	14.0	13.3	12.3	11.3	10.4	-	-	-	-	-	64
72	12.6	12.2	11.5	10.6	10.0	-	10.9	10.2	9.3	8.4	7.6	-	-	-	-	-	72
80	10.2	9.6	8.9	8.3	7.6	-	8.3	7.8	7.0	6.3	5.4	-	-	-	-	-	80
88	7.7	7.4	6.9	6.4	5.8	-	6.2	5.8	5.1	4.4	3.7	-	-	-	-	-	88
96	5.9	5.6	5.1	4.7	4.2	-	4.5	4.0	3.5	2.8	-	-	-	-	-	-	96
104	4.4	3.9	3.7	3.3	2.8	-	3.0	2.6	-	-	-	-	-	-	-	-	104
112	3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	112
1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1)

1) Capacities with horizontal boom

Operation

HA

99,200 lb + 33,100 lb		15.6 ft					32.2 ft/s					360°					ASME B30.5	
		42.3 ft					56.1 ft					70.2 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
10	324.4**304.4*	218.9	163.5	127.9	321.2**	271.6	199.6	152.7	121.1	286.6	241.0	181.5	-	-	10			
12	288.2	287.1	212.8	159.5	125.2	286.0	263.6	194.5	149.3	118.6	271.8	233.9	177.3	138.6	-	12		
14	258.3	257.2	207.0	155.9	122.6	256.7	252.0	189.7	146.1	116.3	251.8	222.1	173.3	135.7	110.0	14		
16	233.9	232.8	201.3	152.2	120.2	232.8	230.9	185.0	142.8	114.2	229.5	214.5	168.8	132.9	107.8	16		
18	214.5	213.2	195.8	148.7	117.8	213.2	211.2	180.6	139.9	112.0	203.7	196.6	165.0	130.2	105.8	18		
20	194.4	192.9	187.1	145.2	115.3	194.7	193.2	174.2	137.1	109.9	182.9	181.7	160.5	127.7	103.7	20		
24	143.1	141.9	140.0	133.2	110.1	144.4	142.9	140.8	129.0	106.0	143.5	141.9	139.4	122.9	99.8	24		
28	111.4	110.5	109.1	107.7	101.6	114.0	112.9	111.4	109.8	101.1	114.4	113.2	111.4	109.4	96.5	28		
32	90.3	89.7	88.5	87.4	86.4	92.6	91.7	90.6	89.2	87.8	92.9	91.9	90.6	89.0	88.0	32		
36	-	-	-	-	-	78.5	77.8	76.8	75.7	74.6	78.9	78.6	78.1	77.5	76.6	36		
40	-	-	-	-	-	67.7	67.1	66.2	65.3	64.4	68.6	67.9	67.0	66.0	64.9	40		
48	-	-	-	-	-	-	-	-	-	-	52.9	52.5	51.7	50.9	50.2	48		
56	-	-	-	-	-	-	-	-	-	-	42.4	42.1	41.5	40.9	40.3	56		
1)	48.1	48.1	48.1	48.1	48.1	35.1	35.1	35.1	35.1	35.1	26.9	26.9	26.9	26.9	26.9	1)		

		84.0 ft					98.1 ft					111.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
12	231.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	
14	220.3	192.7	145.9	-	-	-	-	-	-	-	-	-	-	-	-	-	14	
16	208.6	184.8	145.9	115.3	-	181.9	-	-	-	-	-	-	-	-	-	-	16	
18	188.7	174.7	145.9	115.3	95.0	171.3	143.7	114.4	-	-	-	-	-	-	-	-	18	
20	167.5	165.1	145.5	115.3	95.0	159.4	142.9	114.4	91.1	74.5	138.0	115.5	84.7	-	-	20		
24	140.9	139.2	134.9	114.0	93.7	130.6	128.7	113.5	91.1	74.5	126.3	114.6	84.7	66.8	55.5	24		
28	113.4	112.1	110.1	104.8	91.4	113.1	112.3	106.7	91.1	74.5	106.8	105.1	84.7	66.8	54.5	28		
32	93.9	93.2	92.0	90.3	87.0	93.8	92.6	91.0	87.1	74.5	91.3	90.0	84.7	66.8	54.0	32		
36	80.6	79.9	78.5	77.3	75.9	79.7	78.7	77.2	75.8	69.5	78.1	76.9	75.0	65.1	54.0	36		
40	68.3	67.7	66.6	65.5	64.2	67.5	66.6	65.3	64.0	62.9	65.9	64.8	63.5	62.0	53.5	40		
48	52.7	52.1	51.2	50.4	49.6	51.8	51.2	50.1	49.1	48.2	51.7	51.3	51.2	50.3	47.1	48		
56	42.2	41.7	41.0	40.3	39.7	42.0	41.7	41.3	40.9	40.6	42.4	42.0	41.2	40.3	39.6	56		
64	34.6	34.2	33.7	33.2	32.9	35.8	35.3	34.8	34.2	33.5	34.9	34.4	33.8	33.1	32.4	64		
72	30.0	30.0	29.6	29.4	29.0	30.1	29.7	29.2	28.8	28.1	29.2	28.8	28.1	27.7	27.0	72		
80	-	-	-	-	-	25.7	25.5	25.0	24.6	24.2	24.8	24.5	24.1	23.5	23.3	80		
88	-	-	-	-	-	17.0	17.0	16.5	16.5	16.5	21.6	21.6	21.2	21.1	21.0	88		
96	-	-	-	-	-	-	-	-	-	-	19.6	19.5	19.2	18.8	18.6	96		
104	-	-	-	-	-	-	-	-	-	-	16.2	15.8	15.8	15.8	15.8	104		
1)	20.9	20.9	20.9	20.9	20.9	16.8	16.8	16.8	16.8	16.8	13.0	13.0	13.0	13.0	13.0	1)		

* Heavy lift sheave required

** Heavy lift sheave and 7 sheaves hook block required

1) Capacities with horizontal boom

Operation

HA

99,200 lb + 33,100 lb		15.6 ft					32.2 ft/s					360°					ASME B30.5
		126.0 ft					134.8 ft					148.6 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft	1,000 lb															ft	
24	91.7	83.8	67.5	-	-	-	-	-	-	-	-	-	-	-	-	24	
28	81.2	79.0	67.0	52.9	42.8	74.8	67.9	50.7	-	-	-	-	-	-	-	28	
32	73.4	72.4	65.4	52.9	42.8	67.0	65.2	50.7	41.0	-	62.9	54.8	-	-	-	32	
36	68.5	68.0	63.3	52.9	42.8	60.8	60.3	50.7	40.1	33.3	57.3	52.6	40.3	32.0	-	36	
40	63.5	63.4	60.7	52.8	42.8	55.1	55.1	50.3	39.1	33.3	52.0	50.1	40.1	32.0	26.0	40	
48	51.8	51.0	49.9	48.7	42.4	46.5	46.3	44.6	39.0	33.2	43.8	42.8	39.5	31.7	25.9	48	
56	41.1	40.5	39.7	38.7	37.8	38.8	38.3	37.8	36.0	32.3	37.4	36.5	35.9	31.0	25.6	56	
64	33.5	33.1	32.2	31.5	30.8	33.7	33.0	32.6	31.5	30.3	31.5	30.9	30.8	29.5	24.9	64	
72	28.7	28.7	28.1	27.8	27.2	28.3	27.9	27.0	26.3	25.7	27.0	27.0	27.0	26.5	24.0	72	
80	25.2	24.8	24.4	23.9	23.3	23.9	23.5	23.0	22.4	22.1	24.1	23.7	23.0	22.4	21.8	80	
88	21.7	21.5	21.0	20.6	20.2	20.5	20.2	20.1	20.0	19.8	20.6	20.3	19.7	19.1	18.6	88	
96	18.9	18.7	18.2	17.9	17.5	18.2	18.2	18.1	17.7	17.3	17.8	17.5	17.0	16.9	15.9	96	
104	16.6	16.4	15.9	15.7	15.4	16.5	16.1	15.9	15.5	15.0	15.5	15.4	15.2	14.8	14.3	104	
112	13.1	12.9	12.5	12.3	12.0	14.5	14.2	14.0	13.6	13.4	13.8	13.8	13.4	13.2	12.7	112	
120	-	-	-	-	-	12.8	12.6	12.4	12.0	11.8	12.2	12.1	12.1	12.0	11.3	120	
128	-	-	-	-	-	11.3	11.2	11.0	10.8	10.6	11.2	11.1	11.0	10.8	10.5	128	
136	-	-	-	-	-	-	-	-	-	-	10.2	10.2	9.9	9.7	9.5	136	
144	-	-	-	-	-	-	-	-	-	-	8.4	8.4	8.2	8.0	7.8	144	
1)	9.9	9.9	9.9	9.9	9.9	8.8	8.8	8.8	8.8	8.8	6.2	6.2	6.2	6.2	6.2	1)	

		165.7 ft					181.1 ft					196.9 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft	1,000 lb															ft	
36	51.2	44.9	-	-	-	-	-	-	-	-	-	-	-	-	-	36	
40	48.2	44.2	32.6	25.7	20.7	44.2	37.5	26.7	20.1	-	-	-	-	-	-	40	
48	41.5	40.1	32.6	24.9	20.7	39.5	36.6	26.7	20.1	15.7	33.3	27.6	20.5	15.2	11.2	48	
56	35.4	35.1	32.2	24.9	20.1	34.6	33.5	26.7	20.1	15.7	30.6	25.9	20.5	15.2	11.2	56	
64	30.5	30.5	30.0	24.9	19.6	30.0	29.9	26.0	19.9	15.7	27.0	24.0	20.5	15.2	11.2	64	
72	26.5	25.9	26.1	24.0	19.6	26.1	26.1	23.9	19.8	15.7	23.4	21.7	19.9	15.2	11.2	72	
80	23.1	23.0	22.6	21.2	19.5	22.8	22.4	21.4	19.6	15.6	20.5	19.0	18.3	15.2	11.2	80	
88	20.2	19.7	19.3	18.6	18.0	19.5	19.1	18.4	17.7	15.2	18.0	16.7	16.8	15.1	11.2	88	
96	17.3	17.0	16.5	15.9	15.3	16.7	16.4	15.7	15.2	14.4	16.0	14.8	14.9	14.3	11.2	96	
104	15.0	14.6	14.2	13.7	13.2	14.7	14.7	13.6	13.6	13.1	14.1	13.2	13.2	12.8	11.2	104	
112	12.9	12.7	12.3	11.8	11.4	13.1	12.7	12.3	11.8	11.4	12.3	11.8	11.4	10.9	10.5	112	
120	11.3	11.1	10.8	10.3	10.1	11.4	11.1	10.7	10.3	9.8	10.6	10.2	9.8	9.3	8.7	120	
128	9.8	9.7	9.7	9.1	9.1	10.0	9.6	9.3	8.9	8.5	9.0	8.7	8.3	7.8	7.4	128	
136	8.8	8.8	8.8	8.2	8.2	8.5	8.2	8.0	7.6	7.1	7.6	7.4	6.9	6.5	6.0	136	
144	8.0	8.0	8.0	7.5	7.3	7.3	7.1	6.7	6.4	6.0	6.4	6.0	5.8	5.3	4.9	144	
152	6.1	6.0	5.6	5.4	5.2	6.2	6.0	5.6	5.4	5.2	5.2	5.0	4.7	4.3	3.9	152	
160	-	-	-	-	-	5.3	5.0	4.8	4.6	4.4	4.3	4.1	3.7	3.5	3.1	160	
168	-	-	-	-	-	-	-	-	-	-	3.3	3.2	3.0	-	-	168	
176	-	-	-	-	-	-	-	-	-	-	2.5	2.5	2.3	-	-	176	
1)	3.7	3.7	3.7	3.7	3.7	-	-	-	-	-	-	-	-	-	-	1)	

1) Capacities with horizontal boom

Operation

HA

77,200 lb + 33,100 lb		15.6 ft					32.2 ft/s					360°					ASME B30.5	
		42.3 ft					56.1 ft					70.2 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
10		316.8*	303.8*	218.9	163.5	127.9	314.6*	271.6	199.6	152.7	121.1	286.6	241.0	181.5	-	-	10	
12		281.9	280.8	212.8	159.5	125.2	279.7	263.6	194.5	149.3	118.6	270.8	233.9	177.3	138.6	-	12	
14		252.8	251.7	207.0	155.9	122.6	251.2	249.0	189.7	146.1	116.3	239.1	222.1	173.3	135.7	110.0	14	
16		228.4	227.3	201.3	152.2	120.2	226.2	225.4	185.0	142.8	114.2	206.9	204.4	168.8	132.9	107.8	16	
18		199.6	198.2	185.5	148.7	117.8	199.7	198.2	177.7	139.9	112.0	182.9	180.5	162.5	130.2	105.8	18	
20		170.0	168.4	166.1	144.0	115.3	171.5	169.5	167.0	136.8	109.9	159.2	157.1	154.1	127.7	103.7	20	
24		124.2	123.0	121.3	119.7	108.2	127.2	125.9	124.1	122.0	105.6	127.6	126.1	124.1	117.9	99.8	24	
28		96.3	95.5	94.2	92.9	91.6	99.0	98.0	96.6	95.0	93.4	99.3	98.3	96.6	94.9	92.2	28	
32		77.8	77.1	76.2	75.2	74.1	80.4	79.7	78.9	78.1	77.2	82.7	81.8	80.5	79.1	77.9	32	
36		-	-	-	-	-	69.1	68.4	67.5	66.5	65.5	70.1	69.4	68.3	67.2	66.0	36	
40		-	-	-	-	-	58.4	57.7	57.1	56.2	55.4	59.2	58.6	57.7	56.8	55.8	40	
48		-	-	-	-	-	-	-	-	-	-	45.6	45.0	44.3	43.5	42.8	48	
56		-	-	-	-	-	-	-	-	-	-	36.3	35.8	35.3	34.7	34.5	56	
1)		48.1	48.1	48.1	48.1	48.1	35.1	35.1	35.1	35.1	35.1	26.9	26.9	26.9	26.9	26.9	1)	

		84.0 ft					98.1 ft					111.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
12		231.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	
14		214.0	192.7	145.9	-	-	-	-	-	-	-	-	-	-	-	-	14	
16		188.6	184.8	145.9	115.3	-	174.4	-	-	-	-	-	-	-	-	-	16	
18		170.0	167.4	145.9	115.3	95.0	155.5	140.6	114.4	-	-	-	-	-	-	-	18	
20		150.8	148.8	143.8	115.3	95.0	137.6	135.3	114.4	91.1	74.5	131.9	115.2	84.7	-	-	20	
24		121.8	120.1	117.7	111.2	93.7	118.0	116.3	110.7	91.1	74.5	108.7	107.0	84.7	66.8	55.5	24	
28		101.4	100.3	98.7	96.0	89.4	98.5	97.1	95.1	88.8	74.5	91.6	90.1	83.4	66.8	54.5	28	
32		82.5	81.4	80.0	78.7	77.1	81.4	80.2	78.7	77.1	72.9	78.5	77.1	75.1	66.8	54.0	32	
36		69.9	69.0	67.8	66.6	65.3	68.9	67.9	66.6	65.2	63.7	67.1	65.9	64.3	60.6	53.3	36	
40		59.0	58.4	57.3	56.2	55.1	58.1	57.3	56.2	54.9	53.6	59.4	58.6	57.5	56.2	51.4	40	
48		45.3	44.7	43.9	43.1	42.3	46.6	46.0	45.1	44.3	43.5	45.6	44.9	44.1	43.1	42.0	48	
56		36.6	36.5	36.1	35.8	35.2	37.1	36.7	35.9	35.3	34.6	36.3	35.7	34.9	34.2	33.4	56	
64		30.8	30.5	30.1	29.6	29.1	30.4	30.1	29.4	28.9	28.3	29.5	29.1	28.5	28.5	28.1	64	
72		25.9	25.7	25.2	24.8	24.4	25.5	25.0	24.6	24.1	23.7	25.7	25.4	24.8	24.3	23.9	72	
80		-	-	-	-	-	21.5	21.3	20.9	20.5	20.4	22.0	21.5	21.1	20.7	20.3	80	
88		-	-	-	-	-	17.0	17.0	16.5	16.5	16.5	18.9	18.5	18.3	17.9	17.5	88	
96		-	-	-	-	-	-	-	-	-	-	16.5	16.3	15.9	15.6	15.2	96	
104		-	-	-	-	-	-	-	-	-	-	14.4	14.3	13.9	13.7	13.4	104	
1)		20.9	20.9	20.9	20.9	20.9	16.8	16.8	16.8	16.8	16.8	13.0	13.0	13.0	13.0	13.0	1)	

* Heavy lift sheave required

1) Capacities with horizontal boom

Operation

HA

77,200 lb + 33,100 lb		15.6 ft					32.2 ft/s					360°					ASME B30.5	
		126.0 ft					134.8 ft					148.6 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
24	91.7	83.8	67.5	-	-	-	-	-	-	-	-	-	-	-	-	-	24	
28	81.2	79.0	67.0	52.9	42.8	74.8	67.9	50.7	-	-	-	-	-	-	-	-	28	
32	73.4	72.4	65.4	52.9	42.8	67.0	65.2	50.7	41.0	-	62.9	54.8	-	-	-	-	32	
36	65.9	65.0	61.1	52.9	42.8	60.7	59.6	50.7	40.1	33.3	57.3	52.6	40.3	32.0	-	-	36	
40	57.9	57.0	55.7	52.0	42.8	54.5	53.2	49.9	39.1	33.3	51.9	50.0	40.1	32.0	26.0	-	40	
48	44.3	43.4	42.4	41.3	40.3	43.2	42.2	40.9	37.3	33.2	41.9	40.9	38.2	31.7	25.9	-	48	
56	35.6	35.3	34.6	33.8	32.3	35.4	34.7	33.7	32.9	30.8	34.2	33.8	32.8	30.9	25.6	-	56	
64	29.9	29.5	28.8	28.1	27.4	28.6	28.1	27.8	27.6	26.7	28.8	28.3	27.4	27.0	24.9	-	64	
72	25.0	24.6	23.9	23.5	22.8	24.8	24.5	23.9	23.2	22.6	24.1	23.9	23.2	22.6	21.9	-	72	
80	21.1	20.7	20.3	20.1	19.8	21.1	20.7	20.2	19.6	19.2	20.6	20.2	19.6	19.4	18.3	-	80	
88	18.2	18.0	17.8	17.4	17.0	18.1	17.6	17.2	16.8	16.3	17.7	17.6	17.4	16.8	16.1	-	88	
96	16.1	15.9	15.4	15.0	14.8	15.5	15.2	14.8	14.4	14.0	15.6	15.3	15.0	14.5	14.1	-	96	
104	13.9	13.7	13.5	13.2	12.8	13.5	13.2	13.0	13.0	12.1	13.5	13.2	12.8	12.6	12.1	-	104	
112	10.3	10.1	9.8	9.4	9.2	11.8	11.8	11.8	11.6	11.0	11.8	11.6	11.2	10.9	10.5	-	112	
120	-	-	-	-	-	10.8	10.8	10.5	10.3	10.1	10.3	10.0	9.8	9.4	9.2	-	120	
128	-	-	-	-	-	9.0	8.8	8.6	8.4	8.2	9.0	8.8	8.6	8.4	8.0	-	128	
136	-	-	-	-	-	-	-	-	-	-	8.0	7.7	7.5	7.3	7.0	-	136	
144	-	-	-	-	-	-	-	-	-	-	6.0	5.8	5.8	5.5	5.3	-	144	
1)	9.9	9.9	9.9	9.9	9.9	8.8	8.8	8.8	8.8	8.8	6.2	6.2	6.2	6.2	6.2	-	1)	

		165.7 ft					181.1 ft					196.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
36	51.2	44.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	
40	48.2	44.2	32.6	25.7	20.7	44.2	37.5	26.7	20.1	-	-	-	-	-	-	-	40	
48	41.3	39.8	32.6	24.9	20.7	39.5	36.6	26.7	20.1	15.7	33.3	27.6	20.5	15.2	11.2	-	48	
56	33.7	33.3	31.5	24.9	20.1	33.9	32.7	26.7	20.1	15.7	30.6	25.9	20.5	15.2	11.2	-	56	
64	28.3	27.7	26.9	24.9	19.6	27.7	27.0	25.3	19.9	15.7	27.0	24.0	20.5	15.2	11.2	-	64	
72	23.3	22.8	22.1	21.3	19.6	23.2	22.8	21.3	19.8	15.7	22.6	21.7	19.9	15.2	11.2	-	72	
80	19.6	19.1	18.8	17.8	17.2	19.6	19.1	18.5	17.5	15.6	18.9	18.3	17.6	15.1	11.2	-	80	
88	16.8	16.8	16.6	15.7	15.1	16.5	16.2	15.6	15.0	14.4	15.8	15.4	14.6	14.0	11.2	-	88	
96	14.9	14.6	14.2	13.7	13.2	14.1	13.7	13.2	12.6	12.1	13.3	12.9	12.3	11.7	10.7	-	96	
104	12.8	12.6	12.1	11.7	11.3	11.9	11.7	11.3	10.6	10.2	11.3	10.8	10.4	9.7	9.1	-	104	
112	11.2	10.9	10.5	10.1	9.6	10.3	9.8	9.4	8.9	8.5	9.4	8.9	8.5	7.8	7.4	-	112	
120	9.6	9.4	8.9	8.7	8.3	8.7	8.3	7.8	7.4	7.0	7.8	7.3	6.9	6.3	5.9	-	120	
128	8.3	8.0	7.7	7.4	7.0	7.2	6.9	6.5	6.2	5.7	6.3	5.9	5.5	5.1	4.6	-	128	
136	7.1	6.9	6.5	6.2	6.0	6.0	5.8	5.3	4.9	4.7	4.9	4.7	4.3	4.0	3.5	-	136	
144	6.0	5.8	5.5	5.3	4.9	4.9	4.7	4.2	4.0	3.6	3.8	3.6	3.3	2.9	2.5	-	144	
152	3.9	3.6	3.4	3.2	3.0	3.9	3.6	3.4	3.2	2.8	2.9	-	-	-	-	-	152	
160	-	-	-	-	-	3.1	2.8	2.6	-	-	-	-	-	-	-	-	160	
1)	3.7	3.7	3.7	3.7	3.7	-	-	-	-	-	-	-	-	-	-	-	1)	

1) Capacities with horizontal boom

Operation

HA

55,100 lb + 33,100 lb		15.6 ft					32.2 ft/s					360°					ASME B30.5	
		42.3 ft					56.1 ft					70.2 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
10	310.2*	303.1*	218.9	163.5	127.9	308.0*	271.6	199.6	152.7	121.1	284.8	241.0	181.5	-	-	10		
12	275.3	274.2	212.8	159.5	125.2	272.4	261.5	194.5	149.3	118.6	245.5	232.5	177.3	138.6	-	12		
14	246.8	245.7	207.0	155.9	122.6	234.9	233.4	189.7	146.1	116.3	209.8	206.8	173.3	135.7	110.0	14		
16	217.2	215.1	201.3	152.2	120.2	197.8	195.3	185.0	142.8	114.2	177.5	175.0	168.1	132.9	107.8	16		
18	180.0	178.0	172.8	146.5	117.8	170.4	168.3	164.9	139.9	112.0	156.4	155.3	152.0	130.2	105.8	18		
20	144.1	142.6	140.4	138.1	114.7	147.6	146.0	143.5	134.9	109.9	138.6	136.7	133.9	126.3	103.7	20		
24	104.6	103.6	102.0	100.5	98.7	107.8	106.6	104.8	102.9	100.4	108.2	106.8	105.6	103.4	97.0	24		
28	80.7	79.9	78.7	77.5	76.3	84.8	84.1	82.9	81.5	80.1	86.2	85.2	83.8	82.1	80.7	28		
32	64.9	64.3	63.3	62.4	61.5	68.6	67.9	67.0	65.8	64.7	69.7	69.0	67.7	66.5	65.3	32		
36	-	-	-	-	-	57.9	57.3	56.5	55.5	54.7	59.0	58.3	57.2	56.2	55.2	36		
40	-	-	-	-	-	48.6	48.2	47.5	46.7	46.0	49.7	49.1	48.2	47.3	46.4	40		
48	-	-	-	-	-	-	-	-	-	-	38.6	38.3	37.6	37.0	36.4	48		
56	-	-	-	-	-	-	-	-	-	-	30.7	30.6	30.0	29.6	29.0	56		
1)	48.1	48.1	48.1	48.1	48.1	35.1	35.1	35.1	35.1	35.1	26.2	26.0	25.6	25.4	25.1	1)		

		84.0 ft					98.1 ft					111.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
12	220.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	
14	193.2	186.0	145.9	-	-	-	-	-	-	-	-	-	-	-	-	-	14	
16	165.4	162.9	145.9	115.3	-	148.8	-	-	-	-	-	-	-	-	-	-	16	
18	145.3	143.1	135.6	115.3	95.0	136.0	132.1	114.4	-	-	-	-	-	-	-	-	18	
20	129.0	128.8	123.4	113.9	95.0	122.0	120.1	113.0	91.1	74.5	111.0	109.0	84.7	-	-	20		
24	106.9	105.4	103.3	101.1	91.2	99.6	97.9	95.6	88.8	74.5	91.1	89.4	82.6	66.8	55.5	24		
28	86.1	85.0	83.4	81.6	80.0	83.0	81.7	79.8	77.9	72.6	76.5	75.8	72.7	66.3	54.5	28		
32	69.5	68.6	67.4	66.0	64.5	68.4	67.5	65.9	64.4	62.8	68.9	67.9	65.7	61.0	54.0	32		
36	58.8	58.0	56.9	55.8	54.4	57.9	57.5	56.7	55.4	52.9	59.3	58.3	57.0	54.3	49.9	36		
40	49.5	49.0	48.7	48.6	47.8	50.8	50.1	49.1	48.2	47.1	49.9	49.1	47.9	46.7	45.6	40		
48	39.3	38.9	38.1	37.4	36.6	38.9	38.3	37.4	36.7	35.9	37.8	37.3	36.6	35.8	34.6	48		
56	31.2	30.8	30.2	29.7	29.1	30.8	30.3	29.6	28.9	28.5	31.1	30.6	30.0	29.4	28.6	56		
64	25.5	25.1	24.6	24.2	23.7	25.3	25.2	24.8	24.2	23.7	25.3	24.9	24.4	23.9	23.2	64		
72	21.0	20.8	20.6	20.1	19.7	21.3	21.0	20.6	20.1	19.7	21.0	20.8	20.2	19.7	19.3	72		
80	-	-	-	-	-	18.1	17.9	17.4	17.2	16.8	17.8	17.4	17.0	16.6	16.2	80		
88	-	-	-	-	-	15.5	15.4	14.9	14.7	14.5	15.1	14.8	14.5	14.3	13.8	88		
96	-	-	-	-	-	-	-	-	-	-	13.0	12.7	12.5	12.3	11.8	96		
104	-	-	-	-	-	-	-	-	-	-	11.2	11.0	10.8	10.6	10.3	104		
1)	19.4	19.2	19.0	18.7	18.5	15.0	14.8	14.6	14.3	14.1	11.2	11.2	11.0	10.8	10.6	1)		

* Heavy lift sheave required

1) Capacities with horizontal boom

Operation

HA

55,100 lb + 33,100 lb		15.6 ft					32.2 ft/s					360°					ASME B30.5	
		126.0 ft					134.8 ft					148.6 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
24		85.4	81.7	67.5	-	-	-	-	-	-	-	-	-	-	-	-	-	24
28		75.2	73.5	67.0	52.9	42.8	68.9	65.5	50.7	-	-	-	-	-	-	-	-	28
32		64.6	63.2	61.3	52.9	42.8	59.8	58.1	50.7	41.0	-	-	-	-	-	-	-	32
36		56.2	55.1	53.5	49.5	42.8	53.1	51.0	47.0	40.1	33.3	51.1	48.0	40.3	32.0	-	-	36
40		48.4	47.5	46.2	44.9	42.0	48.2	47.2	43.8	38.9	33.3	44.8	44.4	39.6	32.0	26.0	-	40
48		38.4	37.8	36.8	35.9	33.8	36.9	36.3	35.5	34.0	31.7	37.1	36.3	35.3	31.3	25.9	-	48
56		30.3	29.7	29.0	28.7	27.5	30.3	29.7	28.9	28.0	27.1	29.7	29.1	28.3	27.3	24.9	-	56
64		25.1	24.6	24.0	23.3	22.7	24.5	24.0	23.3	22.8	21.9	24.4	24.0	23.5	22.5	21.0	-	64
72		20.6	20.4	19.7	19.3	18.6	20.2	20.1	19.9	19.5	18.6	20.4	19.9	19.3	18.6	17.9	-	72
80		17.4	17.0	16.6	16.1	15.7	17.6	17.2	16.8	16.3	15.9	17.0	16.6	16.1	15.5	15.0	-	80
88		14.7	14.4	14.0	13.6	13.3	14.9	14.6	14.3	13.8	13.4	14.4	14.0	13.5	13.1	12.6	-	88
96		12.6	12.3	12.0	11.6	11.4	12.8	12.5	12.3	11.8	11.4	12.1	11.8	11.4	11.1	10.7	-	96
104		10.8	10.6	10.3	10.1	9.7	11.0	10.8	10.4	10.1	9.9	10.3	10.1	9.7	9.5	9.0	-	104
112		7.0	6.8	6.5	6.1	5.9	9.4	9.2	9.0	8.8	8.5	8.7	8.5	8.3	7.9	7.6	-	112
120		-	-	-	-	-	8.1	8.1	7.9	7.7	7.3	7.4	7.2	7.0	6.6	6.4	-	120
128		-	-	-	-	-	6.2	5.9	5.8	5.6	5.4	6.2	5.9	5.7	5.5	5.3	-	128
136		-	-	-	-	-	-	-	-	-	-	5.1	5.0	4.8	4.6	4.4	-	136
144		-	-	-	-	-	-	-	-	-	-	3.6	3.3	3.1	2.9	2.9	-	144
1)		8.6	8.4	8.2	8.2	7.9	7.3	7.3	7.1	6.8	6.6	4.9	4.6	4.4	4.4	4.2	-	1)

		165.7 ft					181.1 ft					196.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
36		48.5	43.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36
40		44.7	41.8	32.6	25.7	20.7	42.1	37.2	26.7	20.1	-	-	-	-	-	-	-	40
48		35.8	34.7	31.7	24.9	20.7	34.2	32.6	26.7	20.1	15.7	32.3	27.6	20.5	15.2	11.2	-	48
56		28.6	28.2	26.8	24.2	20.1	28.4	27.6	24.7	20.1	15.7	26.3	24.9	20.5	15.2	11.2	-	56
64		23.9	23.5	22.6	20.8	19.0	22.9	22.4	21.3	19.7	15.7	21.4	20.7	19.2	15.2	11.2	-	64
72		19.7	19.1	18.4	17.7	17.0	18.6	18.2	17.3	16.6	15.7	17.5	16.8	16.0	14.8	11.2	-	72
80		16.3	15.9	15.2	14.8	14.1	15.4	15.0	14.2	13.5	12.8	14.6	13.9	13.0	12.0	10.9	-	80
88		13.7	13.3	12.7	12.3	11.7	12.7	12.3	11.8	11.2	10.5	12.0	11.3	10.5	9.6	8.8	-	88
96		11.5	11.2	10.7	10.3	9.8	10.6	10.3	9.6	9.2	8.5	9.7	9.2	8.5	7.6	7.0	-	96
104		9.7	9.5	9.0	8.6	8.1	8.6	8.4	7.7	7.3	6.8	7.7	7.3	6.6	5.9	5.3	-	104
112		8.1	7.8	7.4	7.0	6.5	7.0	6.7	6.1	5.7	5.2	6.1	5.7	5.2	4.6	3.9	-	112
120		6.7	6.4	6.1	5.7	5.3	5.6	5.2	4.8	4.4	3.9	4.5	4.3	3.9	3.3	2.8	-	120
128		5.4	5.2	4.8	4.6	4.2	4.3	4.0	3.7	3.3	2.9	3.3	3.1	2.6	-	-	-	128
136		4.4	4.1	3.8	3.5	3.3	3.3	3.0	2.7	2.4	-	-	-	-	-	-	-	136
144		3.4	3.1	2.9	2.7	2.5	2.3	-	-	-	-	-	-	-	-	-	-	144
1)		2.2	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1)

1) Capacities with horizontal boom

Operation

HA

33,100 lb + 33,100 lb		15.6 ft					32.2 ft/s					360°					ASME B30.5	
42.3 ft		56.1 ft					70.2 ft											
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°							
ft	1,000 lb														ft			
10	302.6*	302.5*	218.9	163.5	127.9	298.4*	270.5	199.6	152.7	121.1	264.4	239.2	181.5	-	-	10		
12	265.9	264.1	212.8	159.5	125.2	243.0	239.8	194.5	149.3	118.6	210.6	207.5	177.3	138.6	-	12		
14	221.2	218.4	202.5	155.9	122.6	196.0	193.4	183.1	146.1	116.3	178.3	175.6	166.9	135.7	110.0	14		
16	180.5	178.2	175.0	152.2	120.2	165.9	163.5	160.3	142.8	114.2	150.4	148.1	144.9	132.9	107.8	16		
18	148.1	146.2	143.7	134.1	116.7	142.9	141.0	138.3	130.7	112.0	130.9	128.8	126.1	120.8	105.8	18		
20	118.6	117.1	115.2	113.0	110.9	122.1	120.6	118.2	115.9	108.1	117.4	115.7	113.3	111.0	102.8	20		
24	85.5	84.6	83.2	81.6	80.1	90.5	89.3	87.7	86.1	84.4	91.7	90.6	88.8	87.0	85.1	24		
28	65.6	64.8	63.7	62.6	61.4	69.9	69.0	67.8	66.5	65.2	71.0	70.0	68.8	67.3	65.8	28		
32	52.2	51.7	50.9	50.1	49.3	56.0	55.4	54.4	53.4	52.3	57.1	56.4	55.3	54.1	53.2	32		
36	-	-	-	-	-	47.0	46.5	45.6	44.8	43.9	48.0	47.4	47.0	46.5	45.7	36		
40	-	-	-	-	-	39.3	38.8	38.0	37.4	36.7	41.3	41.0	40.2	39.3	38.5	40		
48	-	-	-	-	-	-	-	-	-	-	31.3	30.9	30.3	29.8	29.2	48		
56	-	-	-	-	-	-	-	-	-	-	24.6	24.2	23.9	23.3	22.9	56		
1)	47.2	46.7	46.1	45.4	45.0	29.3	29.1	28.7	28.4	28.0	20.7	20.5	20.1	19.8	19.6	1)		

84.0 ft		98.1 ft					111.9 ft										
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft	1,000 lb														ft		
12	190.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
14	159.3	156.6	144.2	-	-	-	-	-	-	-	-	-	-	-	-	-	14
16	139.4	137.6	130.0	115.3	-	128.3	-	-	-	-	-	-	-	-	-	-	16
18	124.3	122.3	118.3	107.9	95.0	113.3	111.3	106.0	-	-	100.8	-	-	-	-	-	18
20	108.9	107.2	104.8	102.2	93.5	99.8	98.1	95.5	89.9	74.5	92.9	90.2	83.5	-	-	-	20
24	87.7	86.5	84.4	82.3	80.2	81.1	79.5	77.4	75.1	71.5	78.8	77.4	71.8	64.8	55.5	-	24
28	70.7	69.8	68.2	66.6	65.0	69.9	69.4	67.5	63.6	60.3	66.2	65.0	63.1	60.3	54.5	-	28
32	57.8	57.1	56.2	55.4	53.7	58.5	57.6	56.4	55.0	52.9	56.5	55.4	53.8	52.2	50.1	-	32
36	49.7	48.9	48.0	46.9	45.9	49.3	48.6	47.5	46.4	45.1	48.1	47.2	45.9	44.6	43.0	-	36
40	41.9	41.3	40.4	39.5	38.7	41.5	40.8	39.7	38.9	37.8	41.9	41.2	40.2	39.1	36.7	-	40
48	31.7	31.3	30.7	30.0	29.3	32.0	31.6	30.9	30.1	29.4	31.9	31.3	30.5	29.7	28.8	-	48
56	24.9	24.6	24.0	23.4	23.0	25.3	24.9	24.3	23.7	23.1	25.0	24.6	23.9	23.2	22.6	-	56
64	20.0	19.8	19.3	18.9	18.5	20.5	20.0	19.6	19.1	18.7	20.0	19.7	19.2	18.5	18.0	-	64
72	16.4	16.2	15.7	15.5	15.1	16.6	16.4	16.0	15.7	15.3	16.4	16.0	15.5	15.1	14.6	-	72
80	-	-	-	-	-	13.9	13.7	13.3	13.1	12.7	13.6	13.3	12.9	12.4	12.2	-	80
88	-	-	-	-	-	11.7	11.5	11.3	11.1	10.7	11.4	11.1	10.8	10.5	10.2	-	88
96	-	-	-	-	-	-	-	-	-	-	9.5	9.3	9.1	8.9	8.6	-	96
104	-	-	-	-	-	-	-	-	-	-	8.1	7.9	7.7	7.4	7.2	-	104
1)	15.0	14.8	14.6	14.3	14.1	11.2	11.0	11.0	10.8	10.6	8.2	7.9	7.9	7.7	7.5	-	1)

* Heavy lift sheave required

1) Capacities with horizontal boom

Operation

HA







33,100 lb + 33,100 lb		15.6 ft					32.2 ft/s					360°					ASME B30.5	
		126.0 ft					134.8 ft					148.6 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
24		72.1	70.4	65.5	-	-	-	-	-	-	-	-	-	-	-	-	24	
28		61.3	60.2	57.2	52.2	42.8	58.5	56.3	48.7	-	-	50.5	-	-	-	-	28	
32		54.3	53.5	49.7	46.9	42.8	50.9	50.4	46.4	41.0	-	49.5	47.5	-	-	-	32	
36		47.7	46.7	44.5	41.3	38.7	45.5	45.1	41.3	38.0	33.3	43.4	42.3	38.8	32.0	-	36	
40		41.0	40.2	39.5	37.8	36.5	40.2	39.4	38.1	35.6	32.7	38.3	37.6	35.5	31.6	26.0	40	
48		31.5	30.8	30.0	29.0	28.2	30.8	30.4	29.5	28.3	27.3	31.1	30.2	29.4	27.0	24.8	48	
56		24.5	24.0	23.3	22.6	21.9	24.9	24.4	23.7	23.0	21.2	24.2	23.5	22.8	22.0	20.6	56	
64		19.6	19.2	18.7	18.0	17.3	19.9	19.4	18.9	18.3	17.6	19.2	18.7	18.1	17.4	16.7	64	
72		16.0	15.5	15.1	14.6	14.2	16.2	15.9	15.3	14.8	14.4	15.5	15.1	14.6	14.0	13.5	72	
80		13.1	12.8	12.4	12.0	11.6	13.5	13.1	12.7	12.2	11.8	12.8	12.4	12.0	11.3	10.9	80	
88		11.0	10.6	10.4	9.9	9.6	11.2	10.8	10.6	10.2	9.7	10.5	10.2	9.7	9.3	8.8	88	
96		9.1	8.9	8.6	8.2	8.0	9.3	9.1	8.9	8.4	8.1	8.6	8.4	8.0	7.5	7.1	96	
104		7.5	7.4	7.0	6.8	6.6	7.7	7.5	7.3	7.0	6.6	7.0	6.8	6.4	5.9	5.7	104	
112		3.7	3.5	3.3	3.0	2.8	6.3	6.1	5.9	5.7	5.5	5.7	5.4	5.0	4.8	4.3	112	
120		-	-	-	-	-	5.3	5.0	4.8	4.7	4.4	4.4	4.2	3.9	3.7	3.3	120	
128		-	-	-	-	-	3.3	3.2	3.0	2.8	2.6	3.4	3.2	3.0	2.8	2.5	128	
136		-	-	-	-	-	-	-	-	-	-	2.6	2.4	-	-	-	136	
1)		5.5	5.5	5.3	5.1	4.9	4.4	4.4	4.2	4.0	4.0	2.2	2.2	-	-	-	1)	




		165.7 ft					181.1 ft					196.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
36		41.7	38.3	-	-	-	-	-	-	-	-	-	-	-	-	-	36	
40		36.8	36.0	32.1	25.7	20.7	34.0	32.9	26.6	20.1	-	-	-	-	-	-	40	
48		29.3	28.4	27.1	23.9	20.7	26.7	25.8	24.4	20.1	15.7	24.5	23.5	20.0	15.2	11.2	48	
56		23.4	22.7	21.7	20.7	19.2	21.2	20.5	19.4	18.2	15.5	19.3	18.4	17.1	14.7	11.2	56	
64		18.6	18.1	17.3	16.5	15.7	17.1	16.4	15.3	14.4	13.3	15.3	14.4	13.3	12.2	10.6	64	
72		14.8	14.4	13.7	13.1	12.4	13.7	13.1	12.2	11.3	10.4	12.0	11.3	10.2	9.3	8.4	72	
80		12.2	11.7	11.1	10.7	10.0	11.1	10.5	9.6	8.9	8.0	9.4	8.7	7.8	7.0	6.1	80	
88		9.9	9.5	9.1	8.5	8.0	8.8	8.3	7.5	6.9	6.1	7.2	6.6	5.8	5.1	4.3	88	
96		8.1	7.6	7.2	6.7	6.2	6.7	6.4	5.8	5.1	4.5	5.3	4.9	4.2	3.5	2.7	96	
104		6.2	5.9	5.5	5.0	4.6	5.0	4.8	4.4	3.7	3.0	3.7	3.3	2.8	-	-	104	
112		4.8	4.6	4.1	3.7	3.5	3.7	3.5	-	-	-	-	-	-	-	-	112	
120		3.7	3.3	3.1	2.7	-	-	-	-	-	-	-	-	-	-	-	120	
128		2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	128	
1)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1)	

1) Capacities with horizontal boom

Operation

HA







11,000 lb +  33,100 lb		 15.6 ft		 32.2 ft/s		360°		ASME B30.5										
 		42.3 ft					56.1 ft					70.2 ft						
ft		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	ft	
1,000 lb																		
10	292.9*	292.6*	218.9	163.5	127.9	251.8	248.5	199.6	152.7	121.1	217.7	212.4	181.1	-	-	-	-	10
12	223.5	220.4	205.1	159.5	125.2	196.8	193.9	185.0	149.3	118.6	172.3	169.2	164.8	138.6	-	-	-	12
14	174.7	172.2	168.5	153.6	122.6	158.0	155.5	151.9	141.7	116.3	141.1	138.6	135.0	128.9	110.0	-	-	14
16	141.8	139.8	136.8	133.6	120.2	130.8	128.7	125.8	122.7	114.2	122.8	120.7	117.9	113.8	107.8	-	-	16
18	116.3	114.6	112.2	109.7	104.4	112.4	110.5	108.1	107.2	102.0	106.7	104.9	102.5	99.9	96.9	-	-	18
20	93.1	91.9	89.9	88.0	86.0	98.2	96.7	94.6	92.4	90.3	92.5	91.0	88.8	86.4	84.3	-	-	20
24	66.4	65.5	64.1	62.9	61.5	71.3	70.2	68.8	67.4	65.7	72.5	71.2	69.4	67.6	66.0	-	-	24
28	50.3	49.6	48.6	47.6	46.6	54.5	53.8	52.6	51.6	50.4	56.5	56.1	54.9	53.7	52.4	-	-	28
32	39.6	39.1	38.4	37.7	37.0	43.4	42.7	41.8	40.9	40.0	45.9	45.2	44.3	43.1	42.2	-	-	32
36	-	-	-	-	-	36.1	35.5	34.8	34.0	33.2	38.4	37.8	37.1	36.1	35.3	-	-	36
40	-	-	-	-	-	29.7	29.3	28.7	28.0	27.4	31.9	31.5	30.8	30.0	29.3	-	-	40
48	-	-	-	-	-	-	-	-	-	-	23.8	23.3	22.9	22.3	21.7	-	-	48
56	-	-	-	-	-	-	-	-	-	-	18.3	18.0	17.5	17.1	16.8	-	-	56
1)	35.5	35.1	34.6	34.2	33.5	21.8	21.6	21.2	20.9	20.5	15.0	14.8	14.6	14.3	14.1	-	-	1)




 		84.0 ft					98.1 ft					111.9 ft						
ft		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	ft	
1,000 lb																		
12	153.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
14	131.3	128.9	125.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14
16	111.8	109.8	106.8	103.3	-	-	100.9	95.2	-	-	-	-	-	-	-	-	-	16
18	98.0	96.1	93.4	90.9	85.5	-	89.8	88.3	84.0	-	-	85.1	-	-	-	-	-	18
20	85.6	83.9	81.5	79.3	76.9	-	82.2	80.5	77.3	71.1	68.5	75.4	73.6	71.2	-	-	-	20
24	71.0	70.2	68.4	65.6	61.2	-	66.6	65.4	63.5	61.5	58.3	62.5	62.2	57.8	55.7	53.3	-	24
28	57.7	56.7	55.2	53.9	52.4	-	55.3	54.2	52.5	50.9	49.2	53.2	52.1	49.3	46.2	44.5	-	28
32	46.5	45.7	44.6	43.6	42.4	-	46.3	45.8	44.6	42.6	41.0	45.2	44.2	42.9	41.0	38.9	-	32
36	39.0	38.3	37.3	36.4	35.5	-	39.3	38.6	37.5	36.5	35.1	38.5	37.7	36.6	35.3	34.2	-	36
40	32.4	31.9	31.1	30.2	29.5	-	33.0	32.4	31.5	30.6	29.6	32.6	31.9	30.8	30.0	28.9	-	40
48	24.2	23.8	23.1	22.5	21.9	-	24.6	24.2	23.5	22.7	22.1	24.3	23.8	22.9	22.3	21.5	-	48
56	18.6	18.3	17.7	17.3	16.9	-	19.0	18.7	18.1	17.5	17.0	18.7	18.3	17.6	17.1	16.4	-	56
64	14.6	14.4	13.9	13.7	13.2	-	15.0	14.6	14.2	13.7	13.3	14.6	14.4	13.7	13.3	12.8	-	64
72	11.7	11.5	11.1	10.9	10.6	-	12.0	11.7	11.3	11.1	10.6	11.7	11.3	10.9	10.4	10.0	-	72
80	-	-	-	-	-	-	9.6	9.6	9.2	9.0	8.6	9.4	9.2	8.7	8.3	8.1	-	80
88	-	-	-	-	-	-	7.8	7.8	7.5	7.3	7.0	7.5	7.3	7.0	6.5	6.3	-	88
96	-	-	-	-	-	-	-	-	-	-	-	5.9	5.7	5.5	5.0	4.8	-	96
104	-	-	-	-	-	-	-	-	-	-	-	4.6	4.4	4.1	3.9	3.7	-	104
1)	10.6	10.4	10.1	10.1	9.9	-	7.5	7.5	7.3	7.1	6.8	4.6	4.6	4.4	4.2	4.0	-	1)

* Heavy lift sheave required
 1) Capacities with horizontal boom

Operation

HA

11,000 lb +  33,100 lb		 15.6 ft					 32.2 ft/s					360°					ASME B30.5	
 		126.0 ft					134.8 ft					148.6 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
24	59.8	57.3	53.6	-	-	54.8	-	-	-	-	-	-	-	-	-	-	24	
28	50.1	49.0	46.3	43.4	40.0	48.5	46.3	41.0	-	-	45.9	-	-	-	-	-	28	
32	42.6	41.7	40.2	38.3	36.0	42.1	41.0	37.9	35.6	-	39.2	38.0	35.8	-	-	-	32	
36	37.2	36.3	34.8	33.6	31.8	36.7	35.7	34.0	31.1	29.1	34.2	33.1	31.6	29.2	25.1	-	36	
40	32.1	31.3	30.0	28.9	27.6	31.8	30.9	29.8	28.6	25.3	29.6	28.6	27.3	26.0	24.2	-	40	
48	23.8	23.3	22.4	21.6	20.8	24.1	23.5	22.7	21.8	21.0	22.9	22.2	21.2	20.1	18.9	-	48	
56	18.3	17.8	17.1	16.4	15.8	18.5	18.1	17.4	16.6	16.0	17.8	17.3	16.4	15.5	14.7	-	56	
64	14.2	13.9	13.3	12.8	12.1	14.6	14.2	13.5	13.0	12.3	13.8	13.5	12.8	12.1	11.4	-	64	
72	11.3	10.9	10.4	10.0	9.5	11.5	11.1	10.6	10.2	9.8	10.9	10.4	10.0	9.3	8.7	-	72	
80	9.0	8.7	8.3	7.9	7.4	9.2	9.0	8.5	8.1	7.6	8.5	8.3	7.6	7.2	6.5	-	80	
88	7.1	6.7	6.3	6.1	5.6	7.3	7.1	6.6	6.3	5.8	6.5	6.2	5.8	5.3	4.7	-	88	
96	5.3	5.1	4.8	4.6	4.2	5.6	5.3	5.0	4.7	4.4	4.9	4.6	4.2	3.7	3.3	-	96	
104	3.9	3.9	3.5	3.3	3.0	4.3	4.1	3.7	3.4	3.2	3.5	3.3	2.8	2.6	-	-	104	
112	-	-	-	-	-	3.0	3.0	-	-	-	-	-	-	-	-	-	112	
1)	2.4	2.4	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	1)	

 		165.7 ft					181.1 ft					196.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
36	31.3	30.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	
40	27.0	26.2	24.6	23.3	20.4	24.4	23.3	21.8	19.7	-	-	-	-	-	-	-	40	
48	20.9	20.1	18.9	17.8	16.5	18.6	17.7	16.3	15.0	13.7	16.5	15.4	14.1	12.6	10.5	-	48	
56	16.3	15.5	14.5	13.6	12.6	14.1	13.3	12.2	11.2	10.0	12.2	11.5	10.2	8.9	7.7	-	56	
64	12.6	12.1	11.2	10.3	9.4	10.7	10.1	9.0	8.1	7.2	9.0	8.3	7.2	6.1	5.1	-	64	
72	9.8	9.3	8.4	7.8	6.9	8.0	7.3	6.4	5.6	4.9	6.4	5.8	4.7	3.8	2.9	-	72	
80	7.6	7.0	6.3	5.7	5.0	5.9	5.2	4.6	3.7	-	4.3	3.7	-	-	-	-	80	
88	5.6	5.2	4.6	4.1	3.4	4.1	3.4	2.9	-	-	-	-	-	-	-	-	88	
96	4.0	3.7	3.1	2.6	-	-	-	-	-	-	-	-	-	-	-	-	96	
104	2.8	2.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	104	
1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1)	

1) Capacities with horizontal boom

Operation

HA

0 lb + 33,100 lb		15.6 ft					32.2 ft/s					360°					ASME B30.5	
		42.3 ft					56.1 ft					70.2 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
10		266.1	261.8	217.5	163.5	127.9	224.7	220.4	197.1	152.7	121.1	190.4	186.9	178.9	-	-	10	
12		194.6	191.6	187.0	159.1	125.2	171.7	168.8	164.5	146.8	118.6	150.1	147.1	142.9	134.0	-	12	
14		151.3	148.9	145.5	141.8	122.6	137.3	135.0	131.6	128.0	115.9	127.1	124.8	121.5	116.7	108.7	14	
16		122.4	120.3	117.6	114.6	110.6	115.2	113.7	111.6	108.8	104.4	106.9	104.8	102.1	99.3	96.4	16	
18		100.4	98.8	96.5	94.1	91.7	99.9	98.1	95.7	93.4	90.9	92.7	90.9	88.5	86.0	83.5	18	
20		80.4	79.3	77.4	75.7	73.8	85.1	83.6	81.5	79.5	77.4	80.1	78.6	76.4	74.3	72.1	20	
24		57.0	56.2	54.8	53.6	52.3	61.8	60.9	59.5	58.0	56.6	63.6	63.0	61.4	59.8	58.1	24	
28		42.7	42.1	41.1	40.3	39.3	47.1	46.3	45.2	44.1	43.0	49.8	49.1	47.8	46.6	45.3	28	
32		33.4	32.9	32.2	31.5	30.8	37.1	36.6	35.6	34.8	34.0	39.7	39.0	38.1	37.0	36.0	32	
36		-	-	-	-	-	30.6	30.2	29.4	28.7	28.0	33.1	32.4	31.7	30.8	30.0	36	
40		-	-	-	-	-	25.0	24.8	24.1	23.5	22.8	27.4	26.7	26.1	25.4	24.8	40	
48		-	-	-	-	-	-	-	-	-	-	20.0	19.7	19.1	18.5	18.1	48	
56		-	-	-	-	-	-	-	-	-	-	15.2	14.8	14.4	14.0	13.7	56	
1)		29.8	29.3	28.9	28.4	28.0	18.1	17.9	17.6	17.2	17.0	12.3	12.1	11.9	11.7	11.5	1)	

		84.0 ft					98.1 ft					111.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
12		137.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	
14		114.3	112.1	108.8	-	-	-	-	-	-	-	-	-	-	-	-	14	
16		97.1	95.2	92.3	89.3	-	91.8	89.9	-	-	-	-	-	-	-	-	16	
18		84.8	83.5	80.5	78.0	75.4	80.9	79.3	75.1	-	-	73.5	-	-	-	-	18	
20		77.0	75.7	73.5	70.1	65.4	71.1	69.6	67.4	65.3	61.3	67.5	66.0	61.0	-	-	20	
24		61.6	60.4	58.7	57.0	55.3	58.5	57.6	55.3	52.5	50.6	54.9	53.6	51.3	47.7	45.1	24	
28		49.9	49.0	47.5	46.1	44.7	48.6	47.6	46.2	44.1	41.6	45.6	44.4	42.9	41.4	38.7	28	
32		40.2	39.5	38.3	37.4	36.2	40.4	39.5	38.3	37.1	36.0	38.6	37.5	36.1	34.8	33.4	32	
36		33.5	32.9	32.0	31.1	30.1	34.1	33.3	32.4	31.3	30.2	33.0	32.1	30.9	29.8	28.6	36	
40		27.8	27.2	26.5	25.6	24.8	28.2	27.6	26.9	26.1	25.0	27.8	27.2	26.3	25.2	24.3	40	
48		20.4	20.0	19.3	18.7	18.3	20.8	20.4	19.8	19.1	18.5	20.6	20.0	19.3	18.5	17.9	48	
56		15.4	15.2	14.7	14.2	13.8	15.9	15.5	15.0	14.4	14.0	15.5	15.2	14.5	14.0	13.3	56	
64		11.9	11.7	11.4	11.0	10.5	12.3	12.1	11.6	11.2	10.7	11.9	11.7	11.2	10.7	10.1	64	
72		9.3	9.1	8.9	8.6	8.2	9.8	9.3	9.1	8.7	8.4	9.3	9.1	8.7	8.2	7.8	72	
80		-	-	-	-	-	7.6	7.4	7.0	6.8	6.4	7.2	7.0	6.5	6.1	5.7	80	
88		-	-	-	-	-	5.8	5.7	5.5	5.3	4.9	5.4	5.2	4.8	4.5	4.2	88	
96		-	-	-	-	-	-	-	-	-	-	3.9	3.7	3.5	3.2	3.0	96	
104		-	-	-	-	-	-	-	-	-	-	2.8	2.7	2.5	2.3	-	104	
1)		8.4	8.2	8.2	7.9	7.7	5.5	5.3	5.3	5.1	4.9	2.9	2.9	2.6	2.4	2.4	1)	

1) Capacities with horizontal boom

Operation

HA

0 lb + 33,100 lb		15.6 ft					32.2 ft/s					360°					ASME B30.5
		126.0 ft					134.8 ft					148.6 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft	1,000 lb															ft	
24	51.4	50.0	46.9	-	-	50.2	-	-	-	-	-	-	-	-	-	24	
28	42.8	41.6	40.0	38.4	35.5	42.0	40.8	38.4	-	-	38.8	-	-	-	-	28	
32	36.2	35.1	33.8	32.2	30.8	35.6	34.6	33.3	31.5	27.1	33.1	31.9	30.4	-	-	32	
36	31.3	30.4	29.1	27.8	26.4	30.9	30.0	28.8	27.4	24.9	28.5	27.5	26.1	24.8	23.0	36	
40	26.8	26.1	24.8	23.8	22.5	26.6	25.7	24.6	23.5	22.3	24.4	23.6	22.3	21.2	19.9	40	
48	20.1	19.6	18.7	17.9	16.9	20.4	19.6	18.8	17.8	16.9	18.6	17.9	16.9	15.9	14.8	48	
56	15.1	14.6	14.0	13.3	12.7	15.4	15.0	14.3	13.6	12.8	14.2	13.7	12.8	11.9	10.9	56	
64	11.5	11.2	10.6	10.1	9.6	11.9	11.5	11.0	10.3	9.8	11.0	10.5	9.6	8.9	8.0	64	
72	8.9	8.7	8.0	7.5	7.1	9.1	8.9	8.4	7.8	7.3	8.4	7.8	7.1	6.4	5.8	72	
80	6.8	6.4	5.9	5.5	5.0	7.0	6.8	6.3	5.9	5.3	6.3	5.9	5.3	4.6	4.2	80	
88	5.0	4.7	4.3	4.0	3.5	5.2	5.0	4.5	4.2	3.7	4.5	4.1	3.6	3.1	-	88	
96	3.5	3.3	3.0	2.6	-	3.7	3.5	3.2	2.8	2.5	3.1	2.6	-	-	-	96	
104	2.3	-	-	-	-	2.6	2.3	-	-	-	-	-	-	-	-	104	
1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1)	

		165.7 ft					181.1 ft					196.9 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft	1,000 lb															ft	
36	26.0	24.9	-	-	-	-	-	-	-	-	-	-	-	-	-	36	
40	22.2	21.2	19.9	18.5	17.0	19.6	18.5	17.0	15.5	-	-	-	-	-	-	40	
48	16.7	15.9	14.8	13.5	12.5	14.5	13.5	12.4	11.2	9.8	12.4	11.5	10.1	8.8	-	48	
56	12.6	11.9	10.9	9.9	8.9	10.6	9.8	8.7	7.6	6.5	8.7	8.0	6.6	5.5	-	56	
64	9.4	8.8	8.0	7.2	6.2	7.6	6.9	6.0	4.9	4.0	5.8	5.2	4.0	3.1	-	64	
72	6.9	6.4	5.6	4.9	4.0	5.1	4.5	3.8	2.9	-	3.6	2.9	-	-	-	72	
80	4.8	4.4	3.7	-	-	-	-	-	-	-	-	-	-	-	-	80	
88	3.2	2.9	-	-	-	-	-	-	-	-	-	-	-	-	-	88	
1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1)	

1) Capacities with horizontal boom

Operation

HA

99,200 lb + 33,100 lb		11.5 ft					32.2 ft/s					360°					ASME B30.5	
		42.3 ft					56.1 ft					70.2 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
28		82.0	81.1	79.9	78.7	77.3	85.5	84.9	83.5	82.1	80.7	86.9	85.9	84.3	82.9	81.2	28	
32		67.2	66.5	65.6	64.7	63.5	70.6	70.0	68.8	67.6	66.5	71.7	70.8	69.5	68.3	66.9	32	
36		-	-	-	-	-	60.4	59.7	58.8	57.9	56.9	61.4	60.6	59.5	58.4	57.3	36	
40		-	-	-	-	-	51.5	50.8	50.2	49.3	48.5	52.3	51.7	50.8	49.8	48.9	40	
48		-	-	-	-	-	-	-	-	-	-	40.4	40.0	39.4	38.8	38.6	48	
56		-	-	-	-	-	-	-	-	-	-	33.2	33.0	32.3	31.8	31.2	56	
1)		48.1	48.1	48.1	48.1	48.1	35.1	35.1	35.1	35.1	35.1	26.9	26.9	26.9	26.9	26.9	1)	

		84.0 ft					98.1 ft					111.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
28		86.7	85.5	83.8	82.2	80.5	85.0	83.7	81.7	79.7	73.5	79.7	78.3	76.0	66.8	54.5	28	
32		71.5	70.6	69.2	67.6	66.3	70.4	69.5	67.9	66.3	64.7	70.4	69.4	66.9	62.8	54.0	32	
36		61.2	60.4	59.2	57.9	56.6	60.1	59.3	58.0	56.6	55.2	61.6	60.6	59.0	55.6	51.1	36	
40		52.1	51.5	50.4	49.3	48.8	53.4	52.8	51.7	50.6	49.5	52.6	51.7	50.4	49.3	48.0	40	
48		41.6	41.3	40.5	39.8	39.0	41.5	40.9	40.0	39.2	38.3	40.6	40.0	38.9	38.1	37.1	48	
56		33.8	33.4	32.8	32.1	31.6	33.3	32.9	32.1	31.4	30.7	32.8	32.6	31.9	31.5	30.6	56	
64		27.8	27.5	27.0	26.6	25.9	27.3	26.9	26.4	25.7	25.6	27.8	27.3	26.7	26.2	25.4	64	
72		23.5	23.0	22.8	22.4	21.9	23.2	23.2	22.8	22.3	21.7	23.2	22.8	22.4	21.9	21.3	72	
80		-	-	-	-	-	20.0	19.8	19.4	19.0	18.8	19.8	19.6	19.2	18.7	18.1	80	
88		-	-	-	-	-	17.0	16.9	16.5	16.3	16.3	17.0	16.8	16.4	16.0	15.6	88	
96		-	-	-	-	-	-	-	-	-	-	14.8	14.5	14.2	14.0	13.6	96	
104		-	-	-	-	-	-	-	-	-	-	13.0	12.8	12.5	12.3	11.9	104	
1)		20.9	20.9	20.9	20.9	20.5	16.8	16.8	16.5	16.1	15.9	13.0	12.8	12.8	12.6	12.3	1)	

1) Capacities with horizontal boom

Operation

HA

99,200 lb + 33,100 lb		11.5 ft					32.2 ft/s					360°					ASME B30.5
		126.0 ft					134.8 ft					148.6 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft	1,000 lb															ft	
28	77.7	75.3	67.0	52.9	42.8	72.0	67.5	50.7	-	-	-	-	-	-	-	28	
32	68.1	66.7	63.9	52.9	42.8	63.0	60.9	50.7	41.0	-	60.1	54.8	-	-	-	32	
36	59.3	58.2	56.6	50.8	42.8	56.2	54.7	48.8	40.1	33.3	53.4	50.5	40.3	32.0	-	36	
40	51.0	50.2	48.9	47.5	42.3	49.7	48.0	46.3	39.1	33.3	48.4	46.9	40.0	32.0	26.0	40	
48	40.0	39.8	38.8	37.5	35.3	39.7	38.9	37.8	35.9	32.5	38.6	38.2	36.2	31.7	25.9	48	
56	32.9	32.3	31.6	30.7	29.9	31.7	31.5	31.0	30.3	28.4	31.8	31.2	30.7	29.1	25.6	56	
64	26.9	26.4	25.8	25.4	24.9	26.9	26.4	25.7	25.1	24.3	26.4	25.8	25.1	24.2	23.0	64	
72	23.0	22.6	21.9	21.5	20.8	22.4	21.9	21.5	20.8	20.2	22.1	21.9	21.5	20.8	19.3	72	
80	19.4	19.2	18.7	18.1	17.7	18.9	18.5	18.1	17.8	17.0	19.2	18.7	18.1	17.6	17.0	80	
88	16.7	16.4	15.9	15.5	15.1	16.2	16.0	15.9	15.7	15.0	16.4	15.9	15.5	14.9	14.5	88	
96	14.3	14.1	13.8	13.4	13.1	14.4	14.2	14.0	13.6	13.1	14.1	13.7	13.2	12.8	12.5	96	
104	12.5	12.3	11.9	11.7	11.4	12.8	12.5	12.1	11.9	11.4	12.1	11.9	11.4	11.0	10.6	104	
112	8.7	8.5	8.3	8.1	7.7	11.2	10.9	10.5	10.3	10.1	10.5	10.3	9.8	9.6	9.2	112	
120	-	-	-	-	-	9.7	9.6	9.4	9.0	8.8	9.2	8.9	8.6	8.3	7.9	120	
128	-	-	-	-	-	7.8	7.7	7.4	7.2	6.9	7.8	7.7	7.4	7.0	6.8	128	
136	-	-	-	-	-	-	-	-	-	-	6.8	6.6	6.4	6.1	5.9	136	
144	-	-	-	-	-	-	-	-	-	-	4.9	4.9	4.7	4.4	4.2	144	
1)	9.9	9.9	9.7	9.7	9.5	8.8	8.8	8.6	8.4	8.2	6.2	6.2	6.0	5.7	5.7	1)	

		165.7 ft					181.1 ft					196.9 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft	1,000 lb															ft	
36	50.4	44.9	-	-	-	-	-	-	-	-	-	-	-	-	-	36	
40	46.2	43.9	32.6	25.7	20.7	44.0	37.5	26.7	20.1	-	-	-	-	-	-	40	
48	38.3	37.6	32.6	24.9	20.7	37.1	35.6	26.7	20.1	15.7	33.3	27.6	20.5	15.2	11.2	48	
56	31.3	30.6	29.6	24.9	20.1	30.4	29.5	26.3	20.1	15.7	29.5	25.9	20.5	15.2	11.2	56	
64	25.3	24.8	24.1	22.8	19.6	25.4	24.8	23.0	19.9	15.7	24.5	23.3	20.5	15.2	11.2	64	
72	21.5	21.5	20.8	19.2	17.9	21.0	20.4	19.7	18.8	15.7	20.2	19.5	18.6	15.2	11.2	72	
80	18.5	18.1	17.4	16.8	16.1	17.6	17.0	16.3	15.7	15.0	16.7	16.3	15.5	14.6	11.2	80	
88	15.7	15.3	14.8	14.2	13.6	14.8	14.4	13.7	13.1	12.5	14.0	13.5	12.9	12.1	10.8	88	
96	13.4	13.0	12.6	12.0	11.6	12.6	12.1	11.6	10.9	10.5	11.7	11.2	10.7	9.9	9.2	96	
104	11.5	11.2	10.8	10.3	9.9	10.6	10.2	9.7	9.2	8.6	9.7	9.3	8.6	8.1	7.5	104	
112	9.8	9.6	9.2	8.7	8.3	8.9	8.5	8.1	7.6	7.0	7.9	7.6	7.0	6.5	5.9	112	
120	8.4	8.1	7.8	7.4	7.0	7.4	7.0	6.5	6.1	5.6	6.5	6.1	5.6	5.0	4.5	120	
128	7.0	6.8	6.5	6.2	5.7	6.1	5.7	5.3	4.8	4.4	5.1	4.7	4.3	3.7	3.3	128	
136	6.0	5.8	5.3	5.1	4.8	4.9	4.7	4.2	3.8	3.5	4.0	3.5	3.1	2.8	2.4	136	
144	4.9	4.7	4.4	4.2	4.0	3.8	3.6	3.3	2.9	2.7	2.9	2.7	2.2	-	-	144	
152	2.8	2.8	-	-	-	3.0	2.8	-	-	-	-	-	-	-	-	152	
1)	3.5	3.5	3.3	3.3	3.1	-	-	-	-	-	-	-	-	-	-	1)	

1) Capacities with horizontal boom

Operation

HA

77,200 lb + 33,100 lb		11.5 ft					32.2 ft/s					360°					ASME B30.5	
		42.3 ft					56.1 ft					70.2 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
14	208.3	205.4	197.9	155.9	122.6	191.2	188.6	180.4	146.1	116.3	173.9	171.3	165.7	135.7	110.0	14		
16	169.8	167.8	164.9	152.2	120.2	163.6	161.3	157.9	142.8	114.2	150.3	148.0	144.7	132.9	107.8	16		
18	141.5	139.7	137.4	133.4	116.0	141.2	139.3	136.5	129.8	112.0	133.0	130.9	127.9	122.4	105.8	18		
20	117.2	115.7	113.8	111.8	109.7	120.3	118.8	116.6	114.2	108.3	119.6	118.8	116.3	113.3	102.9	20		
24	88.2	87.2	85.8	84.3	82.7	92.6	91.4	89.8	88.1	86.5	93.8	92.6	90.9	89.0	87.1	24		
28	69.7	68.8	67.8	66.6	65.4	73.6	72.7	71.5	70.0	68.7	74.6	73.6	72.2	70.8	69.3	28		
32	56.8	56.2	55.4	54.4	53.5	60.4	59.7	58.5	57.4	56.4	61.2	60.5	59.4	58.1	56.9	32		
36	-	-	-	-	-	51.3	50.8	49.8	48.9	48.0	52.2	51.6	50.7	49.4	48.5	36		
40	-	-	-	-	-	43.4	43.0	42.2	41.5	40.7	45.4	44.8	43.9	43.0	42.2	40		
48	-	-	-	-	-	-	-	-	-	-	35.2	34.8	34.1	33.5	32.7	48		
56	-	-	-	-	-	-	-	-	-	-	28.1	27.8	27.3	26.6	26.2	56		
1)	48.1	48.1	48.1	48.1	48.1	33.3	33.1	32.6	32.2	31.7	23.8	23.6	23.4	22.9	22.7	1)		

		84.0 ft					98.1 ft					111.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
14	157.9	155.2	143.4	-	-	-	-	-	-	-	-	-	-	-	-	-	14	
16	140.4	138.8	131.3	115.3	-	130.6	-	-	-	-	-	-	-	-	-	-	16	
18	126.9	125.0	120.1	109.7	95.0	116.9	114.8	108.1	-	-	101.2	-	-	-	-	-	18	
20	113.0	111.2	108.6	106.0	94.0	104.5	102.6	100.0	90.4	74.5	95.4	93.5	84.1	-	-	-	20	
24	92.2	90.8	88.8	86.5	84.5	86.3	84.9	82.6	80.4	73.2	82.4	81.4	75.2	66.5	55.5	-	24	
28	74.4	73.4	71.8	70.2	68.6	72.4	71.4	69.5	67.5	65.5	71.7	70.4	67.7	62.9	54.5	-	28	
32	61.0	60.1	58.9	58.4	56.3	62.3	61.6	60.3	58.3	55.9	61.1	60.2	58.6	57.0	53.4	-	32	
36	52.2	51.9	51.3	51.0	49.7	53.5	52.7	51.5	50.3	49.1	52.4	51.7	50.2	49.0	47.3	-	36	
40	46.1	45.4	44.5	43.5	42.6	45.6	44.8	43.9	42.8	41.7	44.5	43.9	42.8	41.9	40.4	-	40	
48	35.6	35.2	34.4	33.7	32.9	35.2	34.5	33.7	33.2	32.4	35.6	35.0	34.1	33.3	32.4	-	48	
56	28.4	28.1	27.4	26.8	26.2	28.6	28.3	27.6	26.9	26.3	28.5	27.9	27.3	26.6	25.7	-	56	
64	23.2	23.0	22.5	22.0	21.4	23.4	23.0	22.5	22.0	21.6	23.2	22.8	22.3	21.6	21.0	-	64	
72	19.3	19.0	18.6	18.4	17.9	19.7	19.3	18.8	18.4	17.9	19.3	19.0	18.4	17.9	17.5	-	72	
80	-	-	-	-	-	16.6	16.4	15.9	15.5	15.3	16.3	15.9	15.5	15.1	14.6	-	80	
88	-	-	-	-	-	14.3	14.0	13.7	13.4	13.0	13.8	13.6	13.2	12.8	12.4	-	88	
96	-	-	-	-	-	-	-	-	-	-	11.8	11.6	11.3	11.1	10.6	-	96	
104	-	-	-	-	-	-	-	-	-	-	10.1	10.1	9.9	9.5	9.2	-	104	
1)	17.9	17.6	17.4	17.2	16.8	13.7	13.4	13.2	13.0	12.8	10.4	10.1	9.9	9.7	9.5	-	1)	

1) Capacities with horizontal boom

Operation

HA

77,200 lb + 33,100 lb		11.5 ft					32.2 ft/s					360°					ASME B30.5	
		126.0 ft					134.8 ft					148.6 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
24	77.6	76.0	67.3	-	-	-	-	-	-	-	-	-	-	-	-	-	24	
28	66.2	64.8	62.8	52.9	42.8	62.9	59.7	50.7	-	-	-	-	-	-	-	-	28	
32	57.2	56.2	54.1	51.2	42.8	55.6	53.7	48.6	41.0	-	53.0	49.6	-	-	-	-	32	
36	50.1	49.8	47.3	45.8	41.1	49.1	47.9	44.4	40.1	33.3	47.5	45.4	40.3	32.0	-	-	36	
40	45.2	44.3	43.0	40.8	38.5	43.0	42.5	40.5	38.6	33.1	42.9	41.9	38.8	32.0	26.0	-	40	
48	34.7	34.1	33.2	32.8	31.2	34.7	34.1	33.0	32.0	29.6	34.1	33.4	32.2	30.4	25.9	-	48	
56	28.1	27.6	26.7	26.0	25.3	27.6	26.9	26.3	25.3	24.5	27.6	27.2	26.3	24.7	23.6	-	56	
64	22.8	22.4	21.8	21.2	20.5	22.9	22.6	22.1	21.4	20.2	22.5	21.9	21.2	20.5	19.4	-	64	
72	18.8	18.6	17.9	17.5	16.8	19.0	18.8	18.2	17.7	17.1	18.6	18.2	17.5	16.8	16.2	-	72	
80	15.9	15.5	15.1	14.6	14.2	16.1	15.7	15.3	14.8	14.4	15.5	15.1	14.6	13.9	13.5	-	80	
88	13.4	13.2	12.7	12.4	11.9	13.6	13.4	12.9	12.5	12.2	12.9	12.7	12.3	11.7	11.3	-	88	
96	11.4	11.2	10.9	10.5	10.2	11.6	11.4	11.1	10.6	10.3	10.9	10.7	10.3	10.0	9.5	-	96	
104	9.7	9.6	9.2	9.0	8.8	9.9	9.7	9.5	9.0	8.8	9.2	9.0	8.8	8.4	7.9	-	104	
112	5.9	5.9	5.5	5.2	5.0	8.5	8.3	8.1	7.9	7.4	7.9	7.6	7.2	7.0	6.5	-	112	
120	-	-	-	-	-	7.2	7.2	6.9	6.6	6.4	6.5	6.4	5.9	5.7	5.3	-	120	
128	-	-	-	-	-	5.3	5.2	5.0	4.7	4.5	5.3	5.3	5.0	4.6	4.4	-	128	
136	-	-	-	-	-	-	-	-	-	-	4.4	4.2	4.1	3.9	3.6	-	136	
144	-	-	-	-	-	-	-	-	-	-	2.7	2.7	2.5	2.2	-	-	144	
1)	7.7	7.5	7.3	7.3	7.1	6.4	6.4	6.2	6.0	5.7	4.0	4.0	3.7	3.5	3.5	-	1)	

		165.7 ft					181.1 ft					196.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
36	45.2	41.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	
40	39.9	38.6	32.5	25.7	20.7	38.8	36.4	26.7	20.1	-	-	-	-	-	-	-	40	
48	32.9	32.4	29.5	24.9	20.7	31.3	30.1	25.9	20.1	15.7	28.9	26.9	20.5	15.2	11.2	-	48	
56	27.1	26.3	25.4	22.8	20.1	25.5	24.6	23.1	20.1	15.7	23.5	22.5	19.9	15.2	11.2	-	56	
64	21.9	21.2	20.5	19.5	18.5	20.8	20.2	19.1	17.9	15.7	19.1	18.2	17.1	15.2	11.2	-	64	
72	17.9	17.3	16.6	16.0	15.3	16.8	16.4	15.5	14.6	13.7	15.5	14.8	13.7	12.6	11.2	-	72	
80	14.8	14.4	13.7	13.3	12.6	13.9	13.5	12.8	12.0	11.1	12.6	12.0	11.1	10.2	9.1	-	80	
88	12.5	12.1	11.5	11.0	10.4	11.5	11.2	10.5	9.7	9.0	10.3	9.6	8.8	8.0	7.1	-	88	
96	10.5	10.1	9.6	9.1	8.6	9.4	9.0	8.5	7.8	7.1	8.3	7.6	7.0	6.2	5.3	-	96	
104	8.6	8.4	7.9	7.5	7.0	7.7	7.3	6.6	6.2	5.7	6.6	5.9	5.3	4.6	3.9	-	104	
112	7.2	6.8	6.3	5.9	5.5	6.1	5.7	5.2	4.8	4.3	5.0	4.6	3.9	3.2	-	-	112	
120	5.7	5.5	5.0	4.8	4.4	4.8	4.4	3.9	3.5	3.1	3.7	3.3	-	-	-	-	120	
128	4.6	4.4	4.0	3.7	3.4	3.5	3.3	2.9	-	-	2.6	-	-	-	-	-	128	
136	3.5	3.3	3.0	2.8	2.6	2.4	-	-	-	-	-	-	-	-	-	-	136	
144	2.7	2.5	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	144	
1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1)	

1) Capacities with horizontal boom

Operation

HA

55,100 lb + 33,100 lb		11.5 ft					32.2 ft/s					360°					ASME B30.5	
		42.3 ft					56.1 ft					70.2 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
10	268.6	265.3	218.9	163.5	127.9	234.5	230.0	199.0	152.7	121.1	208.4	205.1	181.0	-	-	10		
12	212.5	209.4	203.9	159.5	125.2	191.9	189.1	184.7	149.3	118.6	172.0	169.1	165.1	138.6	-	12		
14	173.9	171.5	167.9	154.8	122.6	160.1	157.7	154.1	144.0	116.3	145.4	143.1	139.5	132.0	110.0	14		
16	141.8	139.9	137.1	134.3	120.2	136.4	134.4	131.4	128.4	114.2	128.2	126.9	124.2	118.8	107.8	16		
18	117.9	116.3	114.0	111.8	106.4	117.7	115.9	113.5	110.9	104.4	114.1	112.4	109.8	107.1	100.6	18		
20	97.3	96.0	94.1	92.3	90.4	102.1	100.8	98.9	96.7	94.8	100.5	98.9	96.6	94.2	91.8	20		
24	72.7	71.9	70.4	69.0	67.6	77.1	76.0	74.6	73.1	71.4	78.3	77.1	75.4	73.8	72.1	24		
28	57.0	56.3	55.2	54.2	53.0	60.9	60.1	58.9	57.7	56.4	62.0	61.0	59.7	58.4	57.0	28		
32	46.0	45.5	44.8	44.0	43.0	49.6	49.0	48.0	46.9	46.0	51.5	50.9	49.8	48.9	47.8	32		
36	-	-	-	-	-	42.0	41.5	40.6	39.7	38.9	43.9	43.4	42.6	41.7	40.8	36		
40	-	-	-	-	-	35.4	35.0	34.1	33.5	32.8	37.4	37.0	36.1	35.2	34.6	40		
48	-	-	-	-	-	-	-	-	-	-	28.6	28.2	27.6	27.0	26.4	48		
56	-	-	-	-	-	-	-	-	-	-	22.5	22.2	21.7	21.2	20.8	56		
1)	41.9	41.4	40.8	40.3	39.7	26.7	26.5	26.0	25.8	25.4	19.0	18.7	18.5	18.1	17.9	1)		

		84.0 ft					98.1 ft					111.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
12	155.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	
14	136.8	134.4	128.5	-	-	-	-	-	-	-	-	-	-	-	-	-	14	
16	119.1	117.0	114.0	108.0	-	108.7	95.2	-	-	-	-	-	-	-	-	-	16	
18	105.9	104.0	101.4	98.0	89.4	97.0	95.2	92.1	-	-	92.6	-	-	-	-	-	18	
20	94.0	92.3	89.9	87.5	84.9	86.5	86.5	82.3	79.5	73.7	83.7	82.2	75.7	-	-	-	20	
24	76.4	75.2	73.1	71.3	69.3	74.9	73.5	71.5	65.9	63.2	69.5	68.2	66.1	62.9	55.5	24		
28	62.9	62.3	61.4	59.9	56.8	62.6	61.5	59.9	58.4	55.8	58.9	58.2	55.9	54.0	51.7	28		
32	52.3	51.6	50.5	49.1	48.0	51.9	51.0	49.8	48.5	47.1	51.6	50.7	48.4	46.2	44.6	32		
36	44.7	44.0	43.0	41.9	40.9	44.1	43.4	42.3	41.2	40.0	44.7	43.8	42.4	40.2	38.3	36		
40	37.8	37.4	36.5	35.5	34.6	38.3	37.6	36.5	35.7	34.8	38.0	37.4	36.3	35.0	34.1	40		
48	29.1	28.5	27.8	27.2	26.4	29.5	28.9	28.2	27.4	26.6	29.1	28.5	27.7	26.9	26.1	48		
56	22.9	22.5	21.9	21.5	20.8	23.3	22.9	22.2	21.7	21.0	22.9	22.5	21.8	21.0	20.5	56		
64	18.5	18.2	17.7	17.3	16.8	18.9	18.5	18.0	17.5	16.9	18.5	18.0	17.5	16.9	16.4	64		
72	15.1	14.8	14.6	14.2	13.7	15.5	15.1	14.6	14.4	13.9	15.1	14.8	14.4	13.7	13.3	72		
80	-	-	-	-	-	12.9	12.7	12.3	12.0	11.6	12.4	12.2	11.8	11.4	10.9	80		
88	-	-	-	-	-	10.8	10.6	10.4	10.0	9.8	10.4	10.2	9.8	9.6	9.2	88		
96	-	-	-	-	-	-	-	-	-	-	8.8	8.6	8.3	8.0	7.7	96		
104	-	-	-	-	-	-	-	-	-	-	7.4	7.2	7.0	6.6	6.3	104		
1)	13.9	13.7	13.4	13.2	13.0	10.4	10.1	10.1	9.9	9.7	7.5	7.3	7.1	6.8	6.6	1)		

1) Capacities with horizontal boom

Operation

HA




55,100 lb + 33,100 lb		11.5 ft					32.2 ft/s					360°					ASME B30.5
		126.0 ft					134.8 ft					148.6 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft	1,000 lb															ft	
24	65.7	63.9	59.8	-	-	54.8	-	-	-	-	-	-	-	-	-	24	
28	57.0	55.8	51.6	48.6	42.8	54.7	52.2	47.2	-	-	50.5	-	-	-	-	28	
32	49.1	48.6	46.3	43.5	40.3	47.3	46.1	43.6	39.3	-	45.9	43.4	-	-	-	32	
36	43.3	42.7	40.9	39.0	36.2	41.7	40.6	39.1	35.8	32.1	40.9	38.9	36.5	31.5	-	36	
40	37.6	36.7	35.7	34.6	32.9	36.6	36.0	34.2	32.9	31.4	36.0	34.9	33.2	30.5	25.8	40	
48	28.6	28.0	27.1	26.3	25.5	29.1	28.4	27.4	26.6	24.6	28.2	27.6	26.6	25.4	22.8	48	
56	22.5	22.0	21.2	20.6	19.8	22.9	22.2	21.6	20.8	20.0	22.2	21.6	20.8	19.9	19.2	56	
64	18.0	17.6	17.1	16.4	15.8	18.5	18.0	17.3	16.6	16.0	17.8	17.1	16.5	15.8	15.1	64	
72	14.6	14.4	13.7	13.3	12.8	14.8	14.6	14.0	13.5	13.1	14.4	14.0	13.3	12.6	12.2	72	
80	12.0	11.8	11.3	10.9	10.5	12.4	12.0	11.6	11.1	10.7	11.8	11.3	10.9	10.3	9.8	80	
88	10.0	9.7	9.4	9.1	8.6	10.3	9.9	9.6	9.2	8.7	9.7	9.3	8.8	8.4	8.0	88	
96	8.4	8.1	7.8	7.3	7.0	8.6	8.3	8.0	7.5	7.2	7.8	7.5	7.1	6.7	6.2	96	
104	6.8	6.6	6.3	5.9	5.7	7.0	6.8	6.6	6.1	5.9	6.3	5.9	5.7	5.2	4.8	104	
112	3.0	2.8	-	-	-	5.7	5.5	5.2	5.0	4.6	5.0	4.8	4.3	3.9	3.7	112	
120	-	-	-	-	-	4.6	4.4	4.2	4.0	3.8	3.8	3.6	3.3	3.1	2.7	120	
128	-	-	-	-	-	2.8	2.6	2.4	-	-	2.9	2.6	-	-	-	128	
1)	4.9	4.9	4.6	4.4	4.2	4.0	3.7	3.5	3.5	3.3	-	-	-	-	-	1)	

		165.7 ft					181.1 ft					196.9 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft	1,000 lb															ft	
36	38.0	36.5	-	-	-	-	-	-	-	-	-	-	-	-	-	36	
40	33.4	32.3	31.0	25.7	20.7	30.8	29.5	26.3	20.1	-	-	-	-	-	-	40	
48	26.5	25.7	24.4	23.2	20.2	24.2	23.2	21.8	19.4	15.7	22.0	20.9	19.3	15.2	11.2	48	
56	21.2	20.6	19.5	18.4	17.4	19.3	18.4	17.2	16.1	14.5	17.3	16.3	15.1	13.7	11.2	56	
64	17.1	16.5	15.7	14.8	13.9	15.3	14.6	13.7	12.6	11.5	13.5	12.8	11.7	10.5	9.4	64	
72	13.7	13.3	12.6	11.7	11.1	12.2	11.5	10.6	9.8	8.9	10.6	9.8	8.9	7.8	6.9	72	
80	11.1	10.7	10.1	9.4	8.7	9.8	9.1	8.3	7.4	6.8	8.1	7.6	6.5	5.7	4.8	80	
88	9.0	8.6	8.1	7.5	6.9	7.7	7.1	6.4	5.6	5.0	6.2	5.5	4.7	3.9	3.2	88	
96	7.1	6.7	6.2	5.8	5.3	5.8	5.3	4.7	4.0	3.5	4.5	3.9	3.1	-	-	96	
104	5.5	5.2	4.8	4.4	3.9	4.4	3.9	3.3	2.8	-	3.0	2.4	-	-	-	104	
112	4.1	3.9	3.5	3.0	-	3.0	-	-	-	-	-	-	-	-	-	112	
120	3.1	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	120	
1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1)	

1) Capacities with horizontal boom

Operation

HA

33,100 lb +  33,100 lb		 11.5 ft					 32.2 ft/s					360°					ASME B30.5	
		42.3 ft					56.1 ft					70.2 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
10	217.6	214.6	209.6	163.5	127.9	192.6	189.4	184.6	152.7	121.1	169.0	165.9	161.2	-	-	10		
12	171.3	168.6	164.6	154.5	125.2	155.3	152.6	148.8	143.6	118.6	143.1	140.8	137.0	127.8	-	12		
14	139.6	137.3	134.1	130.6	120.6	129.0	126.8	124.4	120.6	112.9	121.1	118.8	115.8	112.5	106.5	14		
16	114.1	112.4	109.9	107.2	104.6	112.0	110.2	107.5	104.8	101.9	104.1	102.2	99.5	96.8	94.1	16		
18	94.8	93.3	91.2	89.1	87.0	96.8	95.2	93.0	90.7	88.4	91.8	90.1	87.7	85.2	82.8	18		
20	77.9	76.5	74.8	73.1	71.4	82.7	81.4	79.6	77.7	75.8	80.6	79.1	76.9	74.8	72.6	20		
24	57.6	56.7	55.4	54.1	52.9	62.0	60.9	59.5	58.0	56.7	63.9	63.3	61.8	60.3	58.7	24		
28	44.6	43.9	42.9	41.9	41.0	48.5	47.8	46.7	45.5	44.4	51.1	50.3	49.0	47.7	46.5	28		
32	35.6	35.1	34.4	33.7	32.9	39.2	38.5	37.6	36.6	35.7	41.6	40.9	39.8	38.8	37.7	32		
36	-	-	-	-	-	32.9	32.3	31.5	30.8	30.0	35.2	34.5	33.6	32.8	31.9	36		
40	-	-	-	-	-	27.4	27.0	26.3	25.7	25.0	29.6	28.9	28.3	27.4	26.8	40		
48	-	-	-	-	-	-	-	-	-	-	22.1	21.7	21.1	20.7	20.1	48		
56	-	-	-	-	-	-	-	-	-	-	17.1	16.8	16.3	16.0	15.5	56		
1)	32.2	31.7	31.3	30.9	30.2	20.3	20.1	19.6	19.4	19.0	14.1	13.9	13.7	13.4	13.2	1)		

		84.0 ft					98.1 ft					111.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
12	129.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	
14	110.3	108.2	105.0	-	-	-	-	-	-	-	-	-	-	-	-	-	14	
16	95.7	93.9	91.0	88.3	-	91.2	89.2	-	-	-	-	-	-	-	-	-	16	
18	84.8	83.8	80.6	78.2	75.3	81.5	79.7	75.8	-	-	74.7	-	-	-	-	-	18	
20	77.9	76.4	74.3	70.3	66.6	72.6	71.0	68.8	66.7	61.5	69.1	67.4	62.8	-	-	-	20	
24	63.3	62.3	60.4	58.8	57.0	59.6	59.1	56.4	54.5	52.7	57.2	55.9	52.2	49.5	47.6	-	24	
28	51.5	50.7	49.3	47.9	46.6	51.0	50.0	48.5	45.5	44.0	48.3	47.1	45.4	43.2	40.2	-	28	
32	42.0	41.4	40.2	39.1	37.9	42.3	41.6	40.4	39.1	37.5	41.2	40.3	38.9	37.3	36.0	-	32	
36	35.5	35.0	34.0	33.0	32.1	36.1	35.4	34.3	33.1	32.1	35.3	34.5	33.4	32.1	31.0	-	36	
40	29.8	29.4	28.5	27.6	27.0	30.5	29.8	28.9	28.1	27.0	30.0	29.4	28.3	27.4	26.3	-	40	
48	22.6	22.1	21.5	20.9	20.1	23.0	22.6	21.8	21.1	20.3	22.6	22.1	21.3	20.5	19.8	-	48	
56	17.5	17.1	16.5	16.1	15.5	17.8	17.5	16.9	16.3	15.8	17.5	17.1	16.4	15.9	15.1	-	56	
64	13.7	13.4	13.0	12.7	12.3	14.1	13.9	13.4	12.8	12.3	13.7	13.4	12.9	12.3	11.8	-	64	
72	11.1	10.9	10.4	10.2	9.8	11.3	11.1	10.6	10.2	10.0	11.1	10.6	10.2	9.8	9.3	-	72	
80	-	-	-	-	-	9.2	9.0	8.6	8.3	7.9	8.8	8.5	8.1	7.9	7.4	-	80	
88	-	-	-	-	-	7.4	7.3	7.0	6.7	6.4	7.1	6.7	6.5	6.1	5.7	-	88	
96	-	-	-	-	-	-	-	-	-	-	5.5	5.3	5.0	4.6	4.4	-	96	
104	-	-	-	-	-	-	-	-	-	-	4.3	4.1	3.9	3.6	3.4	-	104	
1)	9.9	9.9	9.7	9.5	9.3	7.1	6.8	6.8	6.6	6.4	4.2	4.2	4.0	3.7	3.7	-	1)	

1) Capacities with horizontal boom

Operation

HA




33,100 lb + 33,100 lb		11.5 ft					32.2 ft/s					360°					ASME B30.5	
		126.0 ft					134.8 ft					148.6 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
24		53.9	52.6	49.6	-	-	52.7	-	-	-	-	-	-	-	-	-	24	
28		45.5	44.4	42.7	40.1	37.9	44.8	43.6	39.7	-	-	41.7	-	-	-	-	28	
32		39.1	38.0	36.5	35.0	33.3	38.5	37.5	35.9	33.3	27.1	35.9	34.8	33.2	-	-	32	
36		34.2	33.2	31.7	30.5	29.1	33.7	32.8	31.4	29.9	26.7	31.4	30.4	29.0	27.5	24.3	36	
40		29.6	28.7	27.4	26.4	25.1	29.4	28.6	27.3	26.0	24.9	27.3	26.4	25.1	23.8	22.5	40	
48		22.1	21.5	20.8	20.0	19.2	22.5	21.9	21.1	20.2	19.3	21.2	20.6	19.3	18.2	17.2	48	
56		17.1	16.6	15.9	15.2	14.5	17.3	16.9	16.2	15.4	14.8	16.6	16.1	15.1	14.1	13.2	56	
64		13.4	13.0	12.3	11.8	11.2	13.7	13.2	12.7	12.1	11.4	13.0	12.6	11.8	11.0	10.2	64	
72		10.6	10.2	9.8	9.3	8.9	10.9	10.4	10.0	9.5	9.1	10.2	9.8	9.3	8.4	7.8	72	
80		8.5	8.1	7.6	7.2	6.8	8.7	8.3	7.9	7.4	7.0	8.0	7.6	7.2	6.5	5.9	80	
88		6.5	6.3	5.8	5.4	5.1	6.9	6.5	6.1	5.6	5.3	6.1	5.8	5.2	4.7	4.3	88	
96		5.0	4.8	4.4	4.1	3.7	5.3	5.0	4.6	4.3	3.9	4.5	4.2	3.7	3.3	3.0	96	
104		3.7	3.5	3.2	3.0	2.6	3.9	3.7	3.4	3.0	2.8	3.2	2.8	2.6	-	-	104	
112		-	-	-	-	-	2.8	-	-	-	-	-	-	-	-	-	112	
1)		2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1)	

		165.7 ft					181.1 ft					196.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
36		28.7	27.8	-	-	-	-	-	-	-	-	-	-	-	-	-	36	
40		24.9	24.0	22.5	21.2	19.7	22.5	21.4	19.9	18.3	-	-	-	-	-	-	40	
48		19.3	18.4	17.3	16.1	14.8	17.1	16.1	14.8	13.5	12.3	15.1	14.2	12.7	11.4	9.9	48	
56		15.1	14.2	13.2	12.3	11.2	13.0	12.1	11.0	9.9	8.8	11.3	10.4	9.2	8.0	6.6	56	
64		11.7	11.0	10.1	9.2	8.3	9.9	9.1	8.0	7.2	6.2	8.1	7.4	6.3	5.2	4.2	64	
72		8.9	8.4	7.5	6.9	6.0	7.1	6.7	5.8	4.9	4.0	5.6	4.9	4.0	3.1	-	72	
80		6.8	6.3	5.7	5.0	4.2	5.2	4.6	3.9	-	-	3.7	-	-	-	-	80	
88		5.0	4.6	4.0	3.3	-	3.4	3.0	-	-	-	-	-	-	-	-	88	
96		3.5	3.3	2.6	-	-	-	-	-	-	-	-	-	-	-	-	96	
104		2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	104	
1)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1)	

1) Capacities with horizontal boom

Operation

HA







11,000 lb +  33,100 lb		 11.5 ft					 32.2 ft/s					360°					ASME B30.5	
		42.3 ft					56.1 ft					70.2 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
10	166.8	163.6	159.0	154.5	127.6	148.1	145.1	144.0	136.4	120.2	134.2	131.6	127.5	-	-	10		
12	130.0	127.5	123.8	120.2	116.5	121.6	119.2	115.8	112.3	108.8	110.1	107.7	104.5	100.9	-	12		
14	105.1	103.0	100.1	97.1	94.1	100.6	98.6	95.8	92.8	89.9	92.5	90.5	87.7	84.7	81.7	14		
16	86.4	84.8	82.4	80.1	77.7	85.1	83.3	81.0	78.4	76.0	81.0	79.4	77.1	73.8	69.9	16		
18	71.5	70.2	68.3	66.4	64.5	73.7	72.1	70.1	68.0	65.9	71.3	69.7	67.7	65.5	62.7	18		
20	58.2	57.1	55.6	54.1	52.3	63.2	61.9	60.2	58.4	56.7	62.4	60.9	59.2	57.2	55.3	20		
24	42.4	41.5	40.4	39.3	38.1	46.7	45.8	44.4	43.2	41.9	49.2	48.2	46.6	45.1	43.6	24		
28	32.1	31.5	30.6	29.8	28.9	36.0	35.4	34.3	33.3	32.3	38.7	37.8	36.7	35.6	34.4	28		
32	25.1	24.8	24.1	23.4	22.7	28.6	28.2	27.3	26.4	25.7	31.1	30.4	29.5	28.6	27.6	32		
36	-	-	-	-	-	23.7	23.2	22.5	21.8	21.1	26.0	25.3	24.6	23.8	23.0	36		
40	-	-	-	-	-	19.4	18.9	18.3	17.9	17.2	21.5	20.9	20.3	19.6	19.0	40		
48	-	-	-	-	-	-	-	-	-	-	15.6	15.2	14.8	14.2	13.7	48		
56	-	-	-	-	-	-	-	-	-	-	11.6	11.4	10.9	10.6	10.2	56		
1)	22.5	22.3	21.8	21.4	20.7	13.9	13.7	13.2	13.0	12.6	9.3	9.0	8.8	8.6	8.4	1)		




		84.0 ft					98.1 ft					111.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft	1,000 lb															ft		
12	102.2	97.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	
14	87.4	85.5	82.4	-	-	-	-	-	-	-	-	-	-	-	-	-	14	
16	75.6	74.0	71.5	69.0	-	70.9	69.1	-	-	-	-	-	-	-	-	-	16	
18	66.9	65.4	63.2	60.9	58.7	63.1	61.5	58.3	-	-	55.9	-	-	-	-	-	18	
20	59.0	57.7	55.7	53.6	51.6	56.0	54.5	52.5	50.0	46.9	51.9	50.6	48.4	-	-	-	20	
24	47.7	46.4	44.9	43.2	41.6	45.6	44.4	42.7	41.0	39.4	42.5	41.3	39.6	37.9	36.1	-	24	
28	38.8	37.8	36.5	35.3	34.0	37.8	36.9	35.4	34.1	32.6	35.4	34.3	32.9	31.4	29.8	-	28	
32	31.6	30.8	29.7	28.8	27.7	31.6	30.9	29.7	28.6	27.2	29.9	29.0	27.7	26.3	25.0	-	32	
36	26.4	25.8	24.9	24.0	23.1	26.8	26.1	25.1	24.1	23.0	25.7	24.9	23.7	22.5	21.2	-	36	
40	22.0	21.3	20.7	19.8	19.2	22.4	21.8	20.9	20.1	19.4	21.8	21.1	20.1	19.0	17.9	-	40	
48	16.0	15.6	15.0	14.4	13.7	16.5	16.0	15.4	14.8	13.9	16.0	15.6	15.0	14.1	13.3	-	48	
56	11.9	11.6	11.2	10.7	10.2	12.4	12.0	11.6	10.9	10.4	12.0	11.6	11.2	10.5	9.7	-	56	
64	9.1	8.9	8.4	8.0	7.5	9.4	9.1	8.7	8.2	7.8	9.1	8.7	8.3	7.8	7.1	-	64	
72	6.7	6.4	6.2	6.0	5.6	7.1	6.9	6.4	6.0	5.6	6.7	6.4	6.0	5.6	4.9	-	72	
80	-	-	-	-	-	5.3	5.0	4.6	4.4	4.0	4.8	4.6	4.2	3.8	3.3	-	80	
88	-	-	-	-	-	3.7	3.6	3.4	3.1	2.7	3.3	3.1	2.7	-	-	-	88	
1)	6.0	5.7	5.5	5.3	5.1	3.5	3.3	3.1	2.9	2.9	-	-	-	-	-	-	1)	







1) Capacities with horizontal boom

Operation

HA

11,000 lb +  33,100 lb		 11.5 ft					 32.2 ft/s					360°					ASME B30.5	
 		126.0 ft					134.8 ft					148.6 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
24		39.8	38.5	35.7	-	-	39.0	-	-	-	-	-	-	-	-	-	-	24
28		33.2	32.1	30.5	29.0	26.2	32.7	31.6	30.0	-	-	30.1	-	-	-	-	-	28
32		28.1	27.0	25.6	24.2	22.9	27.7	26.7	25.3	24.0	22.4	25.3	24.4	22.9	-	-	-	32
36		24.1	23.2	21.9	20.7	19.5	23.9	23.0	21.8	20.5	19.1	21.8	20.9	19.5	18.1	16.7	-	36
40		20.5	19.9	18.6	17.5	16.4	20.5	19.7	18.6	17.3	16.2	18.6	17.7	16.4	15.3	14.0	-	40
48		15.4	14.8	13.8	12.9	11.9	15.4	14.8	13.8	12.9	11.9	13.8	13.1	12.0	11.0	10.0	-	48
56		11.6	10.9	10.3	9.5	8.6	11.6	11.2	10.3	9.5	8.6	10.3	9.6	8.6	7.9	7.0	-	56
64		8.7	8.2	7.5	6.9	6.2	8.7	8.3	7.5	6.9	6.2	7.4	6.9	6.2	5.3	4.6	-	64
72		6.2	5.8	5.3	4.7	4.2	6.4	6.0	5.6	4.9	4.2	5.3	4.7	4.0	3.3	2.7	-	72
80		4.4	4.0	3.5	3.1	-	4.6	4.4	3.8	3.3	-	3.5	-	-	-	-	-	80
88		2.9	-	-	-	-	3.1	2.9	-	-	-	-	-	-	-	-	-	88
1)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1)







 		165.7 ft					181.1 ft					196.9 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
36		19.6	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36
40		16.6	15.5	14.2	12.9	11.6	14.2	13.3	11.8	10.3	-	-	-	-	-	-	-	40
48		12.0	11.2	10.1	9.1	7.8	10.1	9.1	8.0	6.7	-	8.2	-	-	-	-	-	48
56		8.6	8.0	7.0	6.1	5.1	6.8	6.1	5.0	3.8	-	5.1	-	-	-	-	-	56
64		6.0	5.3	4.6	3.7	2.9	4.2	3.6	2.6	-	-	2.6	-	-	-	-	-	64
72		3.8	3.3	2.7	-	-	2.2	-	-	-	-	-	-	-	-	-	-	72
1)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1)




0 lb +  33,100 lb		 11.5 ft					 32.2 ft/s					360°					ASME B30.5	
 		42.3 ft					56.1 ft					70.2 ft						
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°		
ft		1,000 lb															ft	
10		141.3	138.2	133.9	129.3	124.8	129.0	126.4	122.3	118.3	114.2	114.6	112.0	108.1	-	-	-	10
12		109.5	107.0	103.6	100.0	96.5	103.2	100.9	97.7	94.4	91.0	95.6	93.6	90.5	84.8	-	-	12
14		88.0	85.9	83.1	80.2	77.4	85.1	83.1	80.4	77.6	74.9	80.3	78.4	75.8	73.2	68.7	-	14
16		72.5	70.8	68.4	66.0	63.6	71.5	69.9	67.6	65.3	62.9	68.5	66.9	64.7	62.4	60.1	-	16
18		60.0	58.7	56.7	54.8	52.8	61.8	60.5	58.4	56.4	54.2	59.9	58.6	56.5	54.5	52.4	-	18
20		48.6	47.6	46.1	44.6	43.0	53.0	52.0	50.0	48.3	46.4	52.2	51.1	49.2	47.4	45.5	-	20
24		34.8	34.1	33.0	32.0	30.8	39.2	38.4	37.1	35.9	34.6	41.2	40.2	38.8	37.2	35.8	-	24
28		26.0	25.5	24.6	23.9	23.0	30.0	29.3	28.3	27.4	26.4	32.5	31.8	30.7	29.6	28.5	-	28
32		20.0	19.5	18.9	18.4	17.7	23.5	23.0	22.2	21.4	20.7	25.9	25.2	24.5	23.6	22.6	-	32
36		-	-	-	-	-	19.2	18.7	18.2	17.4	16.7	21.4	20.8	20.2	19.4	18.6	-	36
40		-	-	-	-	-	15.5	15.0	14.6	13.9	13.3	17.4	17.0	16.4	15.7	15.1	-	40
48		-	-	-	-	-	-	-	-	-	-	12.4	12.0	11.6	11.2	10.6	-	48
56		-	-	-	-	-	-	-	-	-	-	8.8	8.6	8.3	7.9	7.4	-	56
1)		17.6	17.4	17.0	16.5	16.1	10.6	10.4	10.1	9.9	9.5	6.8	6.6	6.4	6.2	6.0	-	1)




1) Capacities with horizontal boom

Operation

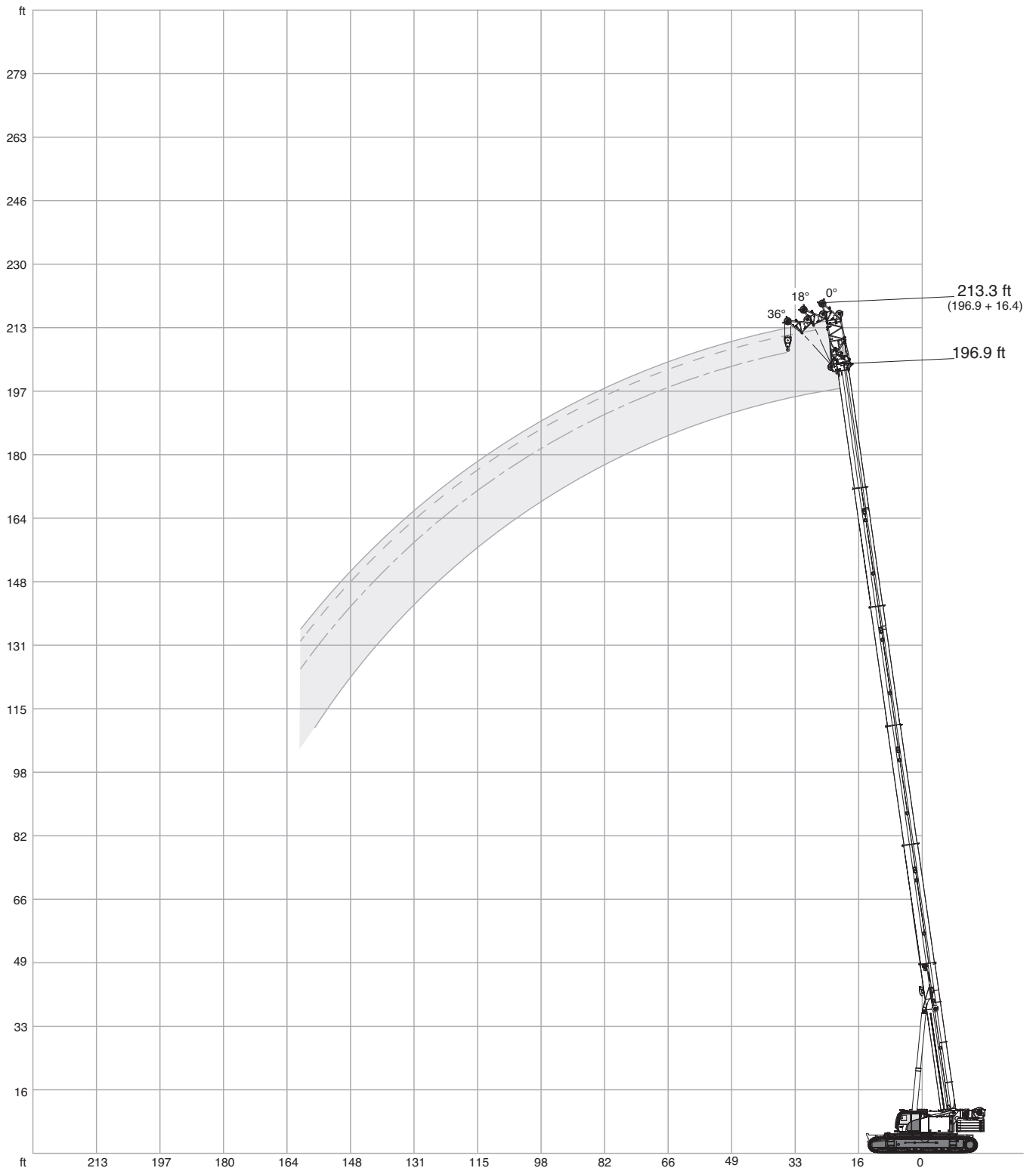
HA

0 lb +  33,100 lb		 11.5 ft					 32.2 ft/s					360°					ASME B30.5
 		84.0 ft					98.1 ft					111.9 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft		1,000 lb															ft
12		87.5	83.8	-	-	-	-	-	-	-	-	-	-	-	-	-	12
14		74.3	72.4	69.7	-	-	-	-	-	-	-	-	-	-	-	-	14
16		64.1	62.5	60.0	57.7	-	59.9	58.3	-	-	-	-	-	-	-	-	16
18		56.4	54.9	52.8	50.7	48.5	53.1	51.6	49.6	-	-	46.5	-	-	-	-	18
20		49.4	48.1	46.4	44.4	42.5	46.9	45.6	43.8	41.9	39.9	43.4	42.1	40.1	-	-	20
24		39.6	38.6	37.0	35.4	33.8	38.0	36.8	35.2	33.5	32.1	35.2	34.0	32.4	30.7	28.9	24
28		32.3	31.5	30.0	28.8	27.4	31.1	30.3	28.8	27.5	26.2	29.0	28.1	26.6	25.1	23.6	28
32		26.3	25.6	24.6	23.6	22.5	26.1	25.2	24.0	22.7	21.6	24.2	23.4	22.0	20.7	19.5	32
36		21.8	21.3	20.5	19.6	18.7	22.0	21.2	20.4	19.3	18.1	20.6	19.8	18.6	17.5	16.4	36
40		17.9	17.4	16.8	15.9	15.3	18.5	17.9	17.0	16.1	15.1	17.3	16.6	15.5	14.6	13.6	40
48		12.8	12.5	11.8	11.4	10.8	13.3	12.8	12.3	11.6	10.8	12.6	12.0	11.2	10.3	9.5	48
56		9.3	9.1	8.5	8.1	7.5	9.7	9.3	8.8	8.3	7.6	9.1	8.6	7.9	7.2	6.5	56
64		6.7	6.3	6.0	5.6	5.1	7.1	6.7	6.2	5.8	5.3	6.4	6.2	5.5	4.8	4.2	64
72		4.5	4.2	4.0	3.6	3.3	4.9	4.7	4.2	3.8	3.3	4.5	4.0	3.6	3.1	2.5	72
80		-	-	-	-	-	3.3	3.1	-	-	-	-	-	-	-	-	80
1)		3.7	3.5	3.3	3.1	3.1	-	-	-	-	-	-	-	-	-	-	1)

 		126.0 ft					134.8 ft					148.6 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft		1,000 lb															ft
24		32.8	31.5	28.7	-	-	32.1	-	-	-	-	-	-	-	-	-	24
28		27.1	26.0	24.5	22.9	20.3	26.5	25.6	24.0	-	-	24.2	-	-	-	-	28
32		22.5	21.5	20.2	18.8	17.5	22.2	21.3	19.9	18.6	17.2	20.2	19.1	17.7	-	-	32
36		19.0	18.3	17.0	15.8	14.6	18.9	18.1	16.9	15.6	14.4	17.0	16.0	14.8	13.4	12.2	36
40		16.0	15.3	14.2	13.1	12.0	16.0	15.3	14.2	12.9	11.8	14.2	13.3	12.2	10.9	9.8	40
48		11.6	10.9	10.0	9.1	8.2	11.7	11.0	10.1	9.1	8.2	10.1	9.3	8.4	7.4	6.4	48
56		8.2	7.6	7.0	6.1	5.3	8.4	7.9	7.0	6.2	5.5	7.0	6.3	5.6	4.7	3.8	56
64		5.7	5.3	4.6	3.9	3.2	5.8	5.3	4.6	4.0	3.3	4.6	4.0	3.3	2.6	-	64
72		3.6	3.3	2.7	2.2	-	3.8	3.3	2.9	2.2	-	2.7	2.2	-	-	-	72
1)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1)

 		165.7 ft					181.1 ft					196.9 ft					
		0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	0,3°	1°	2°	3°	4°	
ft		1,000 lb															ft
36		14.9	13.9	-	-	-	-	-	-	-	-	-	-	-	-	-	36
40		12.2	11.4	10.1	-	-	10.1	-	-	-	-	-	-	-	-	-	40
48		8.4	7.6	6.5	-	-	6.5	-	-	-	-	-	-	-	-	-	48
56		5.4	4.9	3.9	-	-	3.7	-	-	-	-	-	-	-	-	-	56
64		3.2	2.6	-	-	-	-	-	-	-	-	-	-	-	-	-	64
1)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1)

1) Capacities with horizontal boom












Operation






99,200 lb + 33,100 lb		16.4 ft		19.7 ft		32.2 ft/s		360°		ASME B30.5		
		42.3 ft				126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
10		119.2	111.6	89.3	-	-	-	-	-	-	-	10
12		113.1	106.0	86.0	82.2	-	-	-	-	-	-	12
14		107.3	101.1	83.0	79.5	-	-	-	-	-	-	14
16		102.0	96.4	80.3	77.0	67.3	64.9	-	-	-	-	16
18		97.4	92.4	77.9	74.8	65.7	63.6	-	-	-	-	18
20		93.1	88.6	75.5	72.7	64.1	62.4	-	-	-	-	20
24		85.9	82.2	71.6	69.3	60.5	59.4	-	-	-	-	24
28		79.8	76.7	67.8	65.9	57.5	56.6	75.2	68.1	-	-	28
32		74.6	71.9	63.6	62.4	54.9	54.2	67.2	66.1	62.9	-	32
36		69.8	67.7	59.7	58.8	53.3	52.6	61.1	61.0	58.8	58.6	36
40		64.9	63.4	56.1	55.4	-	-	55.5	55.5	54.6	54.4	40
48		-	-	-	-	-	-	46.8	46.6	46.0	45.9	48
56		-	-	-	-	-	-	39.8	39.7	39.5	39.4	56
64		-	-	-	-	-	-	34.7	34.5	34.3	34.2	64
72		-	-	-	-	-	-	31.6	30.9	30.1	30.1	72
80		-	-	-	-	-	-	28.9	28.3	26.6	26.6	80
88		-	-	-	-	-	-	26.6	26.2	24.8	24.8	88
96		-	-	-	-	-	-	23.6	23.5	23.3	23.3	96
104		-	-	-	-	-	-	20.4	20.4	20.7	20.7	104
112		-	-	-	-	-	-	17.7	17.7	17.9	17.9	112
120		-	-	-	-	-	-	15.4	15.4	15.6	15.6	120
128		-	-	-	-	-	-	13.5	13.5	-	-	128

		181.1 ft				196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
48		35.2	28.7	-	-	-	-	26.6	-	-	-	48
56		31.2	27.8	30.4	27.5	29.7	-	25.0	22.5	25.1	-	56
64		27.4	25.3	26.9	25.0	26.6	24.6	22.4	21.3	22.2	21.4	64
72		24.1	22.3	23.9	22.1	23.9	22.1	19.7	19.2	19.7	19.4	72
80		21.1	19.5	21.2	19.7	21.2	19.5	17.3	17.1	17.3	17.3	80
88		18.5	17.1	18.7	17.4	18.8	17.4	15.1	14.9	15.2	15.1	88
96		16.3	15.1	16.5	15.3	16.7	15.3	13.1	13.1	13.4	13.3	96
104		14.5	13.4	14.6	13.5	14.6	13.6	11.4	11.4	11.7	11.7	104
112		12.9	11.8	12.9	12.0	12.9	12.0	10.1	10.1	10.3	10.3	112
120		11.4	10.5	11.5	10.7	11.6	10.7	8.8	8.8	9.0	9.0	120
128		10.0	9.3	10.1	9.5	10.2	9.5	7.7	7.7	7.9	7.9	128
136		8.8	8.2	9.1	8.4	9.1	8.4	6.6	6.6	6.9	6.9	136
144		8.0	7.3	8.0	7.3	8.0	7.3	5.8	5.8	6.0	6.0	144
152		6.9	6.5	7.1	6.5	7.1	6.5	5.0	5.0	5.2	5.2	152
160		6.1	5.7	6.1	5.7	-	-	4.2	4.2	4.4	4.4	160
168		5.2	4.9	5.3	5.0	-	-	3.6	3.6	3.7	3.7	168
176		4.7	4.3	4.3	4.3	-	-	3.0	3.0	3.2	3.2	176

Operation

HAV

99,200 lb +  33,100 lb		 36.1 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
10	77.9	69.2	-	-	-	-	-	-	-	-	-	10	
12	73.4	66.0	-	-	-	-	-	-	-	-	-	12	
14	69.3	62.9	-	-	-	-	-	-	-	-	-	14	
16	65.6	59.9	-	-	-	-	-	-	-	-	-	16	
18	62.2	57.2	-	-	-	-	-	-	-	-	-	18	
20	59.1	54.5	44.9	-	-	-	-	-	-	-	-	20	
24	53.6	50.1	41.9	39.7	-	-	-	-	-	-	-	24	
28	49.2	46.2	39.3	37.4	-	-	-	-	-	-	-	28	
32	45.3	42.9	36.9	35.3	29.0	27.8	51.0	45.2	-	-	-	32	
36	42.1	40.1	34.9	33.3	27.5	26.4	49.3	44.1	-	-	-	36	
40	39.1	37.4	33.0	31.5	26.0	24.9	47.5	43.0	37.4	-	-	40	
48	34.7	33.2	29.1	28.1	23.5	22.7	42.8	40.5	34.3	33.2	-	48	
56	30.8	29.6	26.2	25.4	22.0	21.4	37.4	36.7	31.6	31.4	25.1	24.4	56
64	27.2	26.2	24.1	23.5	-	-	32.3	32.2	29.5	29.3	23.8	23.4	64
72	-	-	-	-	-	-	28.3	28.3	27.4	27.4	22.5	22.5	72
80	-	-	-	-	-	-	25.1	24.9	24.8	24.7	21.4	21.4	80
88	-	-	-	-	-	-	22.2	22.2	22.3	22.2	20.4	20.3	88
96	-	-	-	-	-	-	19.8	19.8	19.9	19.9	18.7	18.6	96
104	-	-	-	-	-	-	17.9	17.9	17.9	17.9	16.8	16.8	104
112	-	-	-	-	-	-	16.2	16.2	16.2	16.2	15.1	15.1	112
120	-	-	-	-	-	-	15.2	15.2	14.7	14.7	13.6	13.6	120
128	-	-	-	-	-	-	14.1	14.1	13.4	13.4	12.6	12.6	128
136	-	-	-	-	-	-	12.7	12.7	12.2	12.2	-	-	136
144	-	-	-	-	-	-	11.1	11.1	11.3	11.3	-	-	144

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
56	25.1	21.4	-	-	-	-	20.6	17.0	-	-	-	56	
64	23.3	21.4	-	-	-	-	19.8	17.0	-	-	-	64	
72	21.0	20.3	19.9	19.9	-	-	18.3	17.0	17.9	-	-	72	
80	18.7	18.6	18.0	18.0	17.4	17.4	16.5	15.7	16.3	15.9	15.7	15.7	80
88	16.7	16.6	16.4	16.4	16.1	16.1	14.6	14.4	14.7	14.5	14.3	14.3	88
96	14.7	14.7	15.0	14.8	14.7	14.7	12.8	12.8	13.1	13.1	13.1	13.0	96
104	13.0	13.0	13.4	13.4	13.4	13.4	11.2	11.2	11.6	11.6	11.9	11.8	104
112	11.6	11.6	12.0	12.0	12.3	12.0	9.8	9.8	10.3	10.3	10.5	10.5	112
120	10.3	10.3	10.7	10.5	10.8	10.8	8.6	8.6	9.0	9.0	9.2	9.2	120
128	9.1	9.0	9.5	9.5	9.6	9.6	7.5	7.5	7.9	7.9	8.2	8.2	128
136	8.1	8.0	8.4	8.4	8.6	8.6	6.6	6.6	6.9	6.9	7.1	7.1	136
144	7.1	7.1	7.3	7.3	7.5	7.5	5.8	5.6	6.0	6.0	6.2	6.2	144
152	6.3	6.3	6.5	6.5	6.7	6.7	5.0	4.8	5.2	5.2	5.4	5.4	152
160	5.5	5.5	5.7	5.7	5.8	5.8	4.2	4.2	4.4	4.4	4.6	4.6	160
168	4.8	4.8	5.0	5.0	5.1	5.1	3.5	3.5	3.7	3.7	3.9	3.9	168
176	4.3	4.3	4.3	4.3	4.3	4.3	2.9	2.9	3.2	3.2	3.2	3.2	176
184	3.6	3.6	3.7	3.7	-	-	-	-	-	-	-	-	184
192	3.0	3.0	3.2	3.2	-	-	-	-	-	-	-	-	192
200	2.6	2.6	2.5	2.5	-	-	-	-	-	-	-	-	200










Operation






99,200 lb + 33,100 lb		55.8 ft		19.7 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
14	49.3	-	-	-	-	-	-	-	-	-	-	14	
16	47.3	41.7	-	-	-	-	-	-	-	-	-	16	
18	45.5	40.4	-	-	-	-	-	-	-	-	-	18	
20	43.6	39.0	-	-	-	-	-	-	-	-	-	20	
24	40.0	36.3	-	-	-	-	-	-	-	-	-	24	
28	36.8	33.8	-	-	-	-	-	-	-	-	-	28	
32	34.1	31.5	26.4	-	-	-	-	-	-	-	-	32	
36	31.7	29.5	24.8	23.6	-	-	33.9	28.3	-	-	-	36	
40	29.5	27.5	23.4	22.3	-	-	32.9	27.7	-	-	-	40	
48	25.8	24.4	21.0	20.1	16.1	15.5	30.8	26.3	-	-	-	48	
56	22.9	21.7	18.9	17.9	14.6	14.1	28.9	25.0	22.1	20.7	-	56	
64	20.3	19.2	16.9	16.2	13.4	13.0	27.1	23.8	20.8	19.5	-	64	
72	18.1	17.2	15.5	14.8	12.6	12.1	25.4	22.5	19.6	18.3	14.3	13.7	72
80	16.3	15.7	14.2	13.8	-	-	23.5	21.2	18.3	17.3	13.8	13.1	80
88	-	-	-	-	-	-	21.4	19.7	17.3	16.5	13.3	12.6	88
96	-	-	-	-	-	-	19.4	18.0	16.3	15.7	12.7	12.2	96
104	-	-	-	-	-	-	17.2	16.1	15.3	14.9	12.4	11.9	104
112	-	-	-	-	-	-	15.6	14.5	14.5	14.3	11.9	11.4	112
120	-	-	-	-	-	-	14.0	13.1	13.4	13.4	11.6	11.2	120
128	-	-	-	-	-	-	12.8	11.9	12.2	12.2	11.4	11.0	128
136	-	-	-	-	-	-	11.7	10.8	11.0	11.0	10.9	10.7	136
144	-	-	-	-	-	-	10.6	10.0	10.0	10.0	10.2	10.0	144
152	-	-	-	-	-	-	9.6	9.2	9.2	9.2	-	-	152
160	-	-	-	-	-	-	9.1	8.6	8.6	8.6	-	-	160

		181.1 ft				196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
56	19.6	15.7	-	-	-	-	-	-	-	-	-	56	
64	19.2	15.7	-	-	-	-	15.8	12.6	-	-	-	64	
72	18.8	15.7	-	-	-	-	15.4	12.6	-	-	-	72	
80	17.4	15.7	15.5	15.3	-	-	14.9	12.6	14.2	-	-	80	
88	15.8	15.4	14.5	14.4	12.8	12.0	13.9	12.5	13.1	12.5	-	88	
96	14.3	14.2	13.6	13.5	12.3	11.8	12.4	12.1	12.0	11.9	11.2	11.2	96
104	12.8	12.7	12.5	12.5	11.8	11.5	11.0	11.0	11.1	10.9	10.6	10.6	104
112	11.4	11.4	11.6	11.4	11.2	11.0	9.6	9.6	10.1	10.1	9.9	9.9	112
120	10.3	10.1	10.5	10.5	10.4	10.4	8.6	8.6	9.0	9.0	9.1	9.1	120
128	9.0	9.0	9.5	9.5	9.6	9.6	7.5	7.5	8.0	7.9	8.3	8.3	128
136	8.0	8.0	8.4	8.4	8.8	8.6	6.6	6.4	7.1	7.0	7.5	7.5	136
144	7.1	7.1	7.5	7.5	7.8	7.8	5.6	5.5	6.2	6.2	6.4	6.4	144
152	6.3	6.3	6.7	6.7	6.9	6.9	4.8	4.8	5.4	5.4	5.6	5.6	152
160	5.5	5.5	5.9	5.8	6.1	6.1	4.2	4.2	4.6	4.6	4.8	4.8	160
168	4.8	4.8	5.2	5.2	5.4	5.3	3.5	3.5	3.9	3.9	4.1	4.1	168
176	4.3	4.3	4.5	4.5	4.7	4.5	2.9	2.9	3.4	3.2	3.4	3.4	176
184	3.6	3.6	3.8	3.8	4.1	4.0	-	-	2.7	2.6	2.8	2.8	184
192	3.0	3.0	3.2	3.2	-	-	-	-	-	-	-	-	192
200	2.6	2.6	2.8	2.8	-	-	-	-	-	-	-	-	200










Operation






HAV

99,200 lb +  33,100 lb		 75.5 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
18	32.9	-	-	-	-	-	-	-	-	-	-	18
20	32.1	26.6	-	-	-	-	-	-	-	-	-	20
24	30.4	25.4	-	-	-	-	-	-	-	-	-	24
28	28.7	24.2	-	-	-	-	-	-	-	-	-	28
32	26.8	23.0	-	-	-	-	-	-	-	-	-	32
36	25.2	21.7	-	-	-	-	-	-	-	-	-	36
40	23.6	20.6	19.0	-	-	-	22.2	19.8	-	-	-	40
48	20.9	18.5	16.7	15.6	-	-	21.2	19.0	-	-	-	48
56	18.5	16.7	14.8	14.0	-	-	20.3	18.2	-	-	-	56
64	16.3	15.1	13.3	12.6	10.1	9.9	19.2	17.4	15.0	-	-	64
72	14.6	13.5	11.9	11.5	9.3	9.1	18.1	16.6	14.1	13.0	-	72
80	13.0	12.2	10.9	10.5	8.7	8.3	17.0	15.7	13.3	12.3	9.6	80
88	11.8	11.1	10.1	9.6	8.1	7.8	16.0	14.8	12.5	11.7	9.2	88
96	10.8	10.2	9.3	9.0	7.7	7.4	15.1	13.9	11.7	11.0	8.8	96
104	10.0	9.4	8.7	8.4	-	-	14.2	13.3	11.1	10.4	8.4	104
112	-	-	-	-	-	-	13.4	12.5	10.6	10.1	8.1	112
120	-	-	-	-	-	-	12.6	11.8	10.1	9.6	7.9	120
128	-	-	-	-	-	-	11.7	11.1	9.7	9.1	7.6	128
136	-	-	-	-	-	-	10.6	10.3	9.3	8.9	7.3	136
144	-	-	-	-	-	-	9.5	9.3	8.8	8.6	7.3	144
152	-	-	-	-	-	-	8.5	8.5	8.5	8.3	7.1	152
160	-	-	-	-	-	-	7.9	7.9	8.0	7.9	7.1	160
168	-	-	-	-	-	-	7.2	7.2	7.3	7.2	-	168
176	-	-	-	-	-	-	6.5	6.5	6.7	6.7	-	176
184	-	-	-	-	-	-	5.9	5.9	-	-	-	184

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
64	14.4	11.2	-	-	-	-	-	-	-	-	-	64
72	14.1	11.2	-	-	-	-	11.7	8.8	-	-	-	72
80	13.8	11.2	-	-	-	-	11.4	8.8	-	-	-	80
88	13.5	11.2	11.5	10.6	-	-	11.2	8.8	-	-	-	88
96	12.8	11.2	11.0	10.2	-	-	10.9	8.8	10.3	-	-	96
104	11.8	11.2	10.4	9.8	8.2	-	10.2	8.8	9.6	8.8	-	104
112	10.7	10.5	9.9	9.5	7.9	7.5	9.2	8.8	9.0	8.8	7.7	112
120	9.7	9.7	9.4	9.1	7.7	7.2	8.2	8.1	8.3	8.3	7.7	120
128	8.8	8.7	8.7	8.6	7.5	7.1	7.3	7.2	7.6	7.6	7.3	128
136	7.7	7.7	8.1	8.1	7.3	6.9	6.4	6.2	6.8	6.8	6.9	136
144	6.9	6.9	7.3	7.3	7.1	6.8	5.5	5.3	6.0	6.0	6.4	144
152	6.1	6.1	6.5	6.5	6.7	6.4	4.6	4.6	5.4	5.4	5.7	152
160	5.3	5.3	5.8	5.8	6.0	6.0	3.9	3.9	4.6	4.6	5.0	160
168	4.5	4.5	5.2	5.2	5.4	5.4	3.3	3.3	3.9	3.9	4.3	168
176	3.8	3.8	4.5	4.5	4.7	4.7	2.7	2.7	3.2	3.2	3.6	176
184	3.4	3.3	3.8	3.8	4.1	4.1	-	-	2.6	2.6	3.1	184
192	-	-	3.2	3.2	3.4	3.4	-	-	-	-	-	192
200	-	-	2.7	2.7	2.9	2.9	-	-	-	-	-	200









Operation



77,200 lb +  33,100 lb		 16.4 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
10	119.2	111.6	89.3	-	-	-	-	-	-	-	-	10	
12	113.1	106.0	86.0	82.2	-	-	-	-	-	-	-	12	
14	107.3	101.1	83.0	79.5	-	-	-	-	-	-	-	14	
16	102.0	96.4	80.3	77.0	67.3	64.9	-	-	-	-	-	16	
18	97.4	92.4	77.9	74.8	65.7	63.6	-	-	-	-	-	18	
20	93.1	88.6	75.5	72.7	64.1	62.4	-	-	-	-	-	20	
24	85.9	82.2	71.6	69.3	60.5	59.4	-	-	-	-	-	24	
28	79.8	76.7	67.8	65.9	57.5	56.6	75.2	68.1	-	-	-	28	
32	74.6	71.9	63.6	62.4	54.9	54.2	67.2	66.1	62.9	-	-	32	
36	69.8	67.7	59.7	58.8	53.3	52.6	61.1	61.0	58.8	58.6	51.1	36	
40	64.9	63.4	56.1	55.4	-	-	55.5	55.5	54.6	54.4	49.0	49.0	40
48	-	-	-	-	-	-	46.8	46.6	46.0	45.9	44.1	44.0	48
56	-	-	-	-	-	-	39.8	39.7	39.5	39.4	38.6	38.5	56
64	-	-	-	-	-	-	34.7	34.5	34.3	34.2	33.6	33.6	64
72	-	-	-	-	-	-	31.6	30.9	30.1	30.1	29.4	29.4	72
80	-	-	-	-	-	-	27.1	27.1	26.5	26.5	25.8	25.8	80
88	-	-	-	-	-	-	22.8	22.8	23.3	23.3	23.5	23.4	88
96	-	-	-	-	-	-	19.3	19.3	19.7	19.7	20.0	20.0	96
104	-	-	-	-	-	-	16.4	16.4	16.9	16.9	16.9	16.9	104
112	-	-	-	-	-	-	14.7	14.7	14.5	14.5	-	-	112
120	-	-	-	-	-	-	13.6	13.6	13.4	13.4	-	-	120
128	-	-	-	-	-	-	12.1	12.1	-	-	-	-	128

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
48	35.2	28.7	-	-	-	-	26.6	-	-	-	-	48	
56	31.2	27.8	30.4	27.5	29.7	-	25.0	22.5	25.1	-	-	56	
64	27.4	25.3	26.9	25.0	26.6	24.6	22.4	21.3	22.2	21.4	22.1	21.4	64
72	24.1	22.3	23.9	22.1	23.9	22.1	19.7	19.2	19.7	19.4	19.5	19.4	72
80	21.1	19.5	21.2	19.7	21.2	19.5	17.3	17.1	17.3	17.3	17.5	17.3	80
88	18.5	17.1	18.7	17.4	18.8	17.4	15.1	14.9	15.2	15.1	15.5	15.4	88
96	16.3	15.1	16.5	15.3	16.7	15.3	13.1	13.1	13.4	13.3	13.6	13.4	96
104	14.5	13.4	14.6	13.5	14.6	13.6	11.4	11.4	11.7	11.7	11.9	11.9	104
112	12.4	11.8	12.9	12.0	12.9	12.0	10.1	10.1	10.3	10.3	10.3	10.3	112
120	10.4	10.4	10.8	10.6	11.0	10.7	8.8	8.8	9.0	9.0	9.0	9.0	120
128	9.0	8.6	9.0	9.0	9.3	9.3	7.7	7.7	7.9	7.9	7.9	7.9	128
136	8.0	7.5	7.5	7.5	7.6	7.6	6.6	6.6	6.9	6.9	6.9	6.9	136
144	6.7	6.6	6.6	6.6	6.6	6.6	5.6	5.6	5.8	5.8	6.0	6.0	144
152	5.4	5.4	5.6	5.6	5.8	5.8	4.5	4.5	4.7	4.7	4.9	4.9	152
160	4.4	4.4	4.6	4.6	-	-	3.4	3.4	3.6	3.6	3.7	3.7	160
168	3.6	3.6	3.8	3.8	-	-	-	-	-	-	-	-	168
176	2.8	2.8	3.0	3.0	-	-	-	-	-	-	-	-	176

Operation

HAV

     																	
 																	
ft	0,3°		1°		0,3°		1°		0,3°		1°		0,3°		1°		ft
	0°		18°		36°		0°		18°		36°						
1,000 lb																	
10	77.9	69.2	-	-	-	-	-	-	-	-	-	-	-	-	-	10	
12	73.4	66.0	-	-	-	-	-	-	-	-	-	-	-	-	-	12	
14	69.3	62.9	-	-	-	-	-	-	-	-	-	-	-	-	-	14	
16	65.6	59.9	-	-	-	-	-	-	-	-	-	-	-	-	-	16	
18	62.2	57.2	-	-	-	-	-	-	-	-	-	-	-	-	-	18	
20	59.1	54.5	44.9	-	-	-	-	-	-	-	-	-	-	-	-	20	
24	53.6	50.1	41.9	39.7	-	-	-	-	-	-	-	-	-	-	-	24	
28	49.2	46.2	39.3	37.4	-	-	-	-	-	-	-	-	-	-	-	28	
32	45.3	42.9	36.9	35.3	29.0	27.8	51.0	45.2	-	-	-	-	-	-	-	32	
36	42.1	40.1	34.9	33.3	27.5	26.4	49.3	44.1	-	-	-	-	-	-	-	36	
40	39.1	37.4	33.0	31.5	26.0	24.9	47.5	43.0	37.4	-	-	-	-	-	-	40	
48	34.7	33.2	29.1	28.1	23.5	22.7	42.8	40.5	34.3	33.2	-	-	-	-	-	48	
56	30.8	29.6	26.2	25.4	22.0	21.4	37.4	36.7	31.6	31.4	25.1	24.4	-	-	-	56	
64	27.2	26.2	24.1	23.5	-	-	32.3	32.2	29.5	29.3	23.8	23.4	-	-	-	64	
72	-	-	-	-	-	-	28.3	28.3	27.4	27.4	22.5	22.5	-	-	-	72	
80	-	-	-	-	-	-	25.1	24.9	24.8	24.7	21.4	21.4	-	-	-	80	
88	-	-	-	-	-	-	22.0	22.0	22.3	22.2	20.4	20.3	-	-	-	88	
96	-	-	-	-	-	-	19.0	19.0	19.8	19.8	18.7	18.6	-	-	-	96	
104	-	-	-	-	-	-	17.3	17.3	17.2	17.2	16.8	16.8	-	-	-	104	
112	-	-	-	-	-	-	15.1	15.1	14.6	14.6	14.9	14.9	-	-	-	112	
120	-	-	-	-	-	-	13.0	13.0	13.2	13.2	13.1	13.1	-	-	-	120	
128	-	-	-	-	-	-	11.2	11.2	11.8	11.8	10.9	10.9	-	-	-	128	
136	-	-	-	-	-	-	9.9	9.9	10.1	10.1	-	-	-	-	-	136	
144	-	-	-	-	-	-	9.3	9.3	8.9	8.7	-	-	-	-	-	144	

 																	
ft	0,3°		1°		0,3°		1°		0,3°		1°		0,3°		1°		ft
	0°		18°		36°		0°		18°		36°						
1,000 lb																	
56	25.1	21.4	-	-	-	-	20.6	17.0	-	-	-	-	-	-	-	56	
64	23.3	21.4	-	-	-	-	19.8	17.0	-	-	-	-	-	-	-	64	
72	21.0	20.3	19.9	19.9	-	-	18.3	17.0	17.9	-	-	-	-	-	-	72	
80	18.7	18.6	18.0	18.0	17.4	17.4	16.5	15.7	16.3	15.9	15.7	15.7	-	-	-	80	
88	16.7	16.6	16.4	16.4	16.1	16.1	14.6	14.4	14.7	14.5	14.3	14.3	-	-	-	88	
96	14.7	14.7	15.0	14.8	14.7	14.7	12.8	12.8	13.1	13.1	13.1	13.0	-	-	-	96	
104	13.0	13.0	13.4	13.4	13.4	13.4	11.2	11.2	11.6	11.6	11.9	11.8	-	-	-	104	
112	11.6	11.6	12.0	12.0	12.3	12.0	9.8	9.8	10.3	10.3	10.5	10.5	-	-	-	112	
120	10.3	10.3	10.7	10.5	10.8	10.8	8.6	8.6	9.0	9.0	9.2	9.2	-	-	-	120	
128	9.1	9.0	9.5	9.5	9.6	9.6	7.5	7.5	7.9	7.9	8.2	8.2	-	-	-	128	
136	7.8	7.8	8.4	8.4	8.6	8.6	6.6	6.6	6.9	6.9	7.1	7.1	-	-	-	136	
144	6.5	6.5	7.1	7.1	7.5	7.5	5.8	5.6	6.0	6.0	6.2	6.2	-	-	-	144	
152	5.4	5.4	5.8	5.8	6.2	6.2	4.9	4.7	5.2	5.2	5.4	5.4	-	-	-	152	
160	4.8	4.8	5.0	5.0	5.1	5.1	3.9	3.9	4.4	4.4	4.6	4.6	-	-	-	160	
168	4.0	4.0	4.2	4.2	4.5	4.5	-	-	3.5	3.5	3.7	3.7	-	-	-	168	
176	3.2	3.2	3.4	3.4	3.6	3.6	-	-	2.6	2.6	2.8	2.8	-	-	-	176	

Operation

77,200 lb + 33,100 lb		55.8 ft		19.7 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
													0°
1,000 lb													
14	49.3	-	-	-	-	-	-	-	-	-	-	14	
16	47.3	41.7	-	-	-	-	-	-	-	-	-	16	
18	45.5	40.4	-	-	-	-	-	-	-	-	-	18	
20	43.6	39.0	-	-	-	-	-	-	-	-	-	20	
24	40.0	36.3	-	-	-	-	-	-	-	-	-	24	
28	36.8	33.8	-	-	-	-	-	-	-	-	-	28	
32	34.1	31.5	26.4	-	-	-	-	-	-	-	-	32	
36	31.7	29.5	24.8	23.6	-	-	33.9	28.3	-	-	-	36	
40	29.5	27.5	23.4	22.3	-	-	32.9	27.7	-	-	-	40	
48	25.8	24.4	21.0	20.1	16.1	15.5	30.8	26.3	-	-	-	48	
56	22.9	21.7	18.9	17.9	14.6	14.1	28.9	25.0	22.1	20.7	-	56	
64	20.3	19.2	16.9	16.2	13.4	13.0	27.1	23.8	20.8	19.5	-	64	
72	18.1	17.2	15.5	14.8	12.6	12.1	25.4	22.5	19.6	18.3	14.3	13.7	72
80	16.3	15.7	14.2	13.8	-	-	23.5	21.2	18.3	17.3	13.8	13.1	80
88	-	-	-	-	-	-	21.4	19.7	17.3	16.5	13.3	12.6	88
96	-	-	-	-	-	-	19.4	18.0	16.3	15.7	12.7	12.2	96
104	-	-	-	-	-	-	17.1	16.1	15.3	14.9	12.4	11.9	104
112	-	-	-	-	-	-	14.9	14.4	14.5	14.3	11.9	11.4	112
120	-	-	-	-	-	-	12.8	12.6	13.4	13.4	11.6	11.2	120
128	-	-	-	-	-	-	11.6	11.0	11.8	11.8	11.4	11.0	128
136	-	-	-	-	-	-	10.4	10.1	10.3	10.3	10.7	10.6	136
144	-	-	-	-	-	-	9.1	9.1	9.1	9.1	9.3	9.3	144
152	-	-	-	-	-	-	8.0	8.0	8.5	8.5	-	-	152
160	-	-	-	-	-	-	6.9	6.9	7.4	7.4	-	-	160

		181.1 ft				196.9 ft							
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
													0°
1,000 lb													
56	19.6	15.7	-	-	-	-	-	-	-	-	-	56	
64	19.2	15.7	-	-	-	-	15.8	12.6	-	-	-	64	
72	18.8	15.7	-	-	-	-	15.4	12.6	-	-	-	72	
80	17.4	15.7	15.5	15.3	-	-	14.9	12.6	14.2	-	-	80	
88	15.8	15.4	14.5	14.4	12.8	12.0	13.9	12.5	13.1	12.5	-	88	
96	14.3	14.2	13.6	13.5	12.3	11.8	12.4	12.1	12.0	11.9	11.2	11.2	96
104	12.8	12.7	12.5	12.5	11.8	11.5	11.0	11.0	11.1	10.9	10.6	10.6	104
112	11.4	11.4	11.6	11.4	11.2	11.0	9.6	9.6	10.1	10.1	9.9	9.9	112
120	10.3	10.1	10.5	10.5	10.4	10.4	8.6	8.6	9.0	9.0	9.1	9.1	120
128	9.0	9.0	9.5	9.5	9.6	9.6	7.5	7.5	8.0	7.9	8.3	8.3	128
136	8.0	8.0	8.4	8.4	8.8	8.6	6.6	6.4	7.1	7.0	7.5	7.5	136
144	7.1	7.1	7.5	7.5	7.8	7.8	5.6	5.5	6.2	6.2	6.4	6.4	144
152	6.0	6.0	6.7	6.7	6.9	6.9	4.8	4.8	5.4	5.4	5.6	5.6	152
160	5.0	5.0	5.8	5.7	6.1	6.1	4.2	4.2	4.6	4.6	4.8	4.8	160
168	4.1	4.1	4.8	4.8	5.3	5.3	3.4	3.4	3.9	3.9	4.1	4.1	168
176	3.6	3.6	3.9	3.9	4.3	4.3	2.7	2.7	3.4	3.2	3.4	3.4	176
184	3.0	3.0	3.3	3.3	3.4	3.4	-	-	-	-	2.8	2.8	184










Operation






HAV

77,200 lb + 33,100 lb		75.5 ft		19.7 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
ft	0°	0,3°		1°		0,3°		1°		0,3°		1°	
		18°		36°		0°		18°		36°			
1,000 lb													
18	32.9	-	-	-	-	-	-	-	-	-	-	18	
20	32.1	26.6	-	-	-	-	-	-	-	-	-	20	
24	30.4	25.4	-	-	-	-	-	-	-	-	-	24	
28	28.7	24.2	-	-	-	-	-	-	-	-	-	28	
32	26.8	23.0	-	-	-	-	-	-	-	-	-	32	
36	25.2	21.7	-	-	-	-	-	-	-	-	-	36	
40	23.6	20.6	19.0	-	-	-	22.2	19.8	-	-	-	40	
48	20.9	18.5	16.7	15.6	-	-	21.2	19.0	-	-	-	48	
56	18.5	16.7	14.8	14.0	-	-	20.3	18.2	-	-	-	56	
64	16.3	15.1	13.3	12.6	10.1	9.9	19.2	17.4	15.0	-	-	64	
72	14.6	13.5	11.9	11.5	9.3	9.1	18.1	16.6	14.1	13.0	-	72	
80	13.0	12.2	10.9	10.5	8.7	8.3	17.0	15.7	13.3	12.3	9.6	9.2	80
88	11.8	11.1	10.1	9.6	8.1	7.8	16.0	14.8	12.5	11.7	9.2	8.7	88
96	10.8	10.2	9.3	9.0	7.7	7.4	15.1	13.9	11.7	11.0	8.8	8.3	96
104	10.0	9.4	8.7	8.4	-	-	14.2	13.3	11.1	10.4	8.4	8.0	104
112	-	-	-	-	-	-	13.4	12.5	10.6	10.1	8.1	7.7	112
120	-	-	-	-	-	-	12.5	11.8	10.1	9.6	7.9	7.4	120
128	-	-	-	-	-	-	11.2	11.0	9.7	9.1	7.6	7.3	128
136	-	-	-	-	-	-	9.8	9.8	9.3	8.9	7.3	7.1	136
144	-	-	-	-	-	-	8.4	8.4	8.8	8.6	7.3	6.8	144
152	-	-	-	-	-	-	7.4	7.4	8.2	8.0	7.1	6.8	152
160	-	-	-	-	-	-	6.9	6.9	7.2	7.2	7.1	6.8	160
168	-	-	-	-	-	-	6.2	6.2	6.2	6.2	-	-	168
176	-	-	-	-	-	-	5.4	5.4	5.8	5.8	-	-	176
184	-	-	-	-	-	-	4.6	4.6	-	-	-	-	184

		181.1 ft				196.9 ft							
ft	0°	0,3°		1°		0,3°		1°		0,3°		1°	
		18°		36°		0°		18°		36°			
1,000 lb													
64	14.4	11.2	-	-	-	-	-	-	-	-	-	-	64
72	14.1	11.2	-	-	-	-	11.7	8.8	-	-	-	-	72
80	13.8	11.2	-	-	-	-	11.4	8.8	-	-	-	-	80
88	13.5	11.2	11.5	10.6	-	-	11.2	8.8	-	-	-	-	88
96	12.8	11.2	11.0	10.2	-	-	10.9	8.8	10.3	-	-	-	96
104	11.8	11.2	10.4	9.8	8.2	-	10.2	8.8	9.6	8.8	-	-	104
112	10.7	10.5	9.9	9.5	7.9	7.5	9.2	8.8	9.0	8.8	7.7	7.3	112
120	9.7	9.7	9.4	9.1	7.7	7.2	8.2	8.1	8.3	8.3	7.7	7.1	120
128	8.8	8.7	8.7	8.6	7.5	7.1	7.3	7.2	7.6	7.6	7.3	6.9	128
136	7.7	7.7	8.1	8.1	7.3	6.9	6.4	6.2	6.8	6.8	6.9	6.7	136
144	6.9	6.9	7.3	7.3	7.1	6.8	5.5	5.3	6.0	6.0	6.4	6.2	144
152	6.0	6.0	6.5	6.5	6.7	6.4	4.6	4.6	5.4	5.4	5.7	5.7	152
160	5.0	5.0	5.8	5.8	6.0	6.0	3.9	3.9	4.6	4.6	5.0	5.0	160
168	4.2	4.2	5.1	5.1	5.4	5.4	3.3	3.3	3.9	3.9	4.3	4.3	168
176	3.2	3.2	4.3	4.3	4.7	4.7	2.7	2.7	3.2	3.2	3.6	3.6	176
184	2.7	2.7	3.4	3.4	3.9	3.9	-	-	2.6	2.6	3.1	3.0	184

Operation

55,100 lb +  33,100 lb		 16.4 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
10	119.2	111.6	89.3	-	-	-	-	-	-	-	-	10	
12	113.1	106.0	86.0	82.2	-	-	-	-	-	-	-	12	
14	107.3	101.1	83.0	79.5	-	-	-	-	-	-	-	14	
16	102.0	96.4	80.3	77.0	67.3	64.9	-	-	-	-	-	16	
18	97.4	92.4	77.9	74.8	65.7	63.6	-	-	-	-	-	18	
20	93.1	88.6	75.5	72.7	64.1	62.4	-	-	-	-	-	20	
24	85.9	82.2	71.6	69.3	60.5	59.4	-	-	-	-	-	24	
28	79.8	76.7	67.8	65.9	57.5	56.6	75.2	68.1	-	-	-	28	
32	74.6	71.9	63.6	62.4	54.9	54.2	67.2	66.1	62.9	-	-	32	
36	69.8	67.7	59.7	58.8	53.3	52.6	61.1	61.0	58.8	58.6	51.1	36	
40	64.9	63.4	56.1	55.4	-	-	55.5	55.5	54.6	54.4	49.0	49.0	40
48	-	-	-	-	-	-	46.8	46.1	46.0	45.9	44.1	44.0	48
56	-	-	-	-	-	-	38.5	38.0	38.9	38.9	38.6	38.5	56
64	-	-	-	-	-	-	32.3	32.1	31.7	31.5	32.1	32.1	64
72	-	-	-	-	-	-	26.1	26.1	27.0	27.0	27.4	27.4	72
80	-	-	-	-	-	-	21.6	21.6	22.3	22.3	22.7	22.7	80
88	-	-	-	-	-	-	18.9	18.9	18.4	18.4	18.9	18.9	88
96	-	-	-	-	-	-	16.7	16.7	16.7	16.7	16.8	16.8	96
104	-	-	-	-	-	-	14.2	14.2	14.4	14.4	14.6	14.6	104
112	-	-	-	-	-	-	12.0	12.0	12.2	12.2	-	-	112
120	-	-	-	-	-	-	10.3	10.3	10.4	10.4	-	-	120
128	-	-	-	-	-	-	9.3	9.3	-	-	-	-	128

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
48	35.2	28.7	-	-	-	-	26.6	-	-	-	-	48	
56	31.2	27.8	30.4	27.5	29.7	-	25.0	22.5	25.1	-	-	56	
64	27.4	25.3	26.9	25.0	26.6	24.6	22.4	21.3	22.2	21.4	22.1	21.4	64
72	24.1	22.3	23.9	22.1	23.9	22.1	19.7	19.2	19.7	19.4	19.5	19.4	72
80	19.9	19.4	20.7	19.7	21.1	19.5	17.3	17.1	17.3	17.3	17.5	17.3	80
88	16.3	16.3	17.0	17.0	17.6	17.2	15.1	14.9	15.2	15.1	15.5	15.4	88
96	13.9	13.2	13.9	13.9	14.3	14.3	13.0	12.9	13.4	13.3	13.6	13.4	96
104	11.5	11.4	11.9	11.7	11.9	11.9	10.7	10.7	11.1	11.1	11.5	11.5	104
112	9.6	9.6	10.0	10.0	10.3	10.3	8.5	8.5	8.9	8.9	9.4	9.4	112
120	7.8	7.8	8.2	8.2	8.4	8.4	6.7	6.7	7.1	7.1	7.5	7.5	120
128	6.3	6.3	6.6	6.6	6.8	6.8	5.2	5.2	5.6	5.6	5.8	5.8	128
136	4.9	4.9	5.2	5.2	5.4	5.4	3.8	3.8	4.3	4.3	4.5	4.5	136
144	3.8	3.8	4.0	4.0	4.2	4.2	2.7	2.7	2.9	2.9	3.1	3.1	144
152	-	-	3.0	3.0	3.2	3.2	-	-	-	-	-	-	152

Operation

HAV

55,100 lb + 33,100 lb		36.1 ft		19.7 ft		32.2 ft/s		360°		ASME B30.5	
		42.3 ft				126.0 ft					
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft
	0°		18°		36°		0°		18°		
1,000 lb											
10	77.9	69.2	-	-	-	-	-	-	-	-	10
12	73.4	66.0	-	-	-	-	-	-	-	-	12
14	69.3	62.9	-	-	-	-	-	-	-	-	14
16	65.6	59.9	-	-	-	-	-	-	-	-	16
18	62.2	57.2	-	-	-	-	-	-	-	-	18
20	59.1	54.5	44.9	-	-	-	-	-	-	-	20
24	53.6	50.1	41.9	39.7	-	-	-	-	-	-	24
28	49.2	46.2	39.3	37.4	-	-	-	-	-	-	28
32	45.3	42.9	36.9	35.3	29.0	27.8	51.0	45.2	-	-	32
36	42.1	40.1	34.9	33.3	27.5	26.4	49.3	44.1	-	-	36
40	39.1	37.4	33.0	31.5	26.0	24.9	47.5	43.0	37.4	-	40
48	34.7	33.2	29.1	28.1	23.5	22.7	42.8	40.5	34.3	33.2	48
56	30.8	29.6	26.2	25.4	22.0	21.4	37.4	36.7	31.6	31.4	56
64	27.2	26.2	24.1	23.5	-	-	31.6	31.2	29.5	29.3	64
72	-	-	-	-	-	-	26.1	26.1	27.4	27.4	72
80	-	-	-	-	-	-	21.8	21.8	23.1	23.1	80
88	-	-	-	-	-	-	19.0	19.0	19.1	19.1	88
96	-	-	-	-	-	-	15.9	15.9	16.0	16.0	96
104	-	-	-	-	-	-	13.8	13.8	14.3	14.3	104
112	-	-	-	-	-	-	12.5	12.5	12.5	12.0	112
120	-	-	-	-	-	-	11.1	11.1	10.9	10.6	120
128	-	-	-	-	-	-	9.5	9.5	9.7	9.7	128
136	-	-	-	-	-	-	8.2	8.2	8.5	8.5	136
144	-	-	-	-	-	-	7.1	7.1	7.3	7.3	144

		181.1 ft				196.9 ft						
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft	
	0°		18°		36°		0°		18°			36°
1,000 lb												
56	25.1	21.4	-	-	-	-	20.6	17.0	-	-	-	56
64	23.3	21.4	-	-	-	-	19.8	17.0	-	-	-	64
72	21.0	20.3	19.9	19.9	-	-	18.3	17.0	17.9	-	-	72
80	18.7	18.6	18.0	18.0	17.4	17.4	16.5	15.7	16.3	15.9	15.7	80
88	16.6	16.5	16.4	16.4	16.1	16.1	14.6	14.4	14.7	14.5	14.3	88
96	14.0	14.0	15.0	14.8	14.7	14.7	12.8	12.8	13.1	13.1	13.1	96
104	11.5	11.5	12.9	12.8	13.4	13.4	11.0	11.0	11.6	11.6	11.9	104
112	9.8	9.8	10.5	10.5	11.4	11.4	9.2	9.2	10.3	10.3	10.5	112
120	8.4	8.4	9.0	9.0	9.5	9.5	7.3	7.3	8.4	8.4	9.1	120
128	6.9	6.9	7.7	7.7	8.0	8.0	5.8	5.8	6.8	6.8	7.5	128
136	5.6	5.6	6.3	6.3	6.8	6.8	4.5	4.5	5.4	5.4	6.0	136
144	4.2	4.2	4.9	4.9	5.6	5.6	3.4	3.4	4.0	4.0	4.7	144
152	3.4	3.4	3.8	3.8	4.3	4.3	-	-	2.9	2.9	3.4	152
160	-	-	2.8	2.8	3.2	3.2	-	-	-	-	-	160










Operation






55,100 lb + 33,100 lb		55.8 ft		19.7 ft		32.2 ft/s		360°		ASME B30.5		
		42.3 ft				126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
14		49.3	-	-	-	-	-	-	-	-	-	14
16		47.3	41.7	-	-	-	-	-	-	-	-	16
18		45.5	40.4	-	-	-	-	-	-	-	-	18
20		43.6	39.0	-	-	-	-	-	-	-	-	20
24		40.0	36.3	-	-	-	-	-	-	-	-	24
28		36.8	33.8	-	-	-	-	-	-	-	-	28
32		34.1	31.5	26.4	-	-	-	-	-	-	-	32
36		31.7	29.5	24.8	23.6	-	-	33.9	28.3	-	-	36
40		29.5	27.5	23.4	22.3	-	-	32.9	27.7	-	-	40
48		25.8	24.4	21.0	20.1	16.1	15.5	30.8	26.3	-	-	48
56		22.9	21.7	18.9	17.9	14.6	14.1	28.9	25.0	22.1	20.7	56
64		20.3	19.2	16.9	16.2	13.4	13.0	27.1	23.8	20.8	19.5	64
72		18.1	17.2	15.5	14.8	12.6	12.1	25.4	22.5	19.6	18.3	72
80		16.3	15.7	14.2	13.8	-	-	22.6	21.0	18.3	17.3	80
88		-	-	-	-	-	-	19.0	18.6	17.3	16.5	88
96		-	-	-	-	-	-	15.9	15.9	16.3	15.7	96
104		-	-	-	-	-	-	14.2	13.4	14.7	14.7	104
112		-	-	-	-	-	-	12.2	12.2	12.7	12.7	112
120		-	-	-	-	-	-	10.5	10.4	10.6	10.6	120
128		-	-	-	-	-	-	9.5	8.9	9.7	9.7	128
136		-	-	-	-	-	-	8.2	8.1	8.3	8.3	136
144		-	-	-	-	-	-	7.5	7.5	7.5	7.5	144
152		-	-	-	-	-	-	6.5	6.5	6.9	6.9	152
160		-	-	-	-	-	-	5.7	5.7	6.1	6.1	160

		181.1 ft				196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
56		19.6	15.7	-	-	-	-	-	-	-	-	56
64		19.2	15.7	-	-	-	-	15.8	12.6	-	-	64
72		18.8	15.7	-	-	-	-	15.4	12.6	-	-	72
80		17.4	15.7	15.5	15.3	-	-	14.9	12.6	14.2	-	80
88		15.8	15.4	14.5	14.4	12.8	12.0	13.9	12.5	13.1	12.5	88
96		14.0	14.0	13.6	13.5	12.3	11.8	12.4	12.1	12.0	11.9	96
104		11.9	11.9	12.5	12.5	11.8	11.5	11.0	11.0	11.1	10.9	104
112		10.0	10.0	11.6	11.4	11.2	11.0	9.2	9.2	10.1	10.1	112
120		8.4	8.3	10.0	10.0	10.4	10.4	7.6	7.6	9.0	9.0	120
128		7.5	7.4	8.4	8.4	9.4	9.4	6.3	6.3	7.8	7.8	128
136		6.3	6.3	7.0	6.8	7.9	7.9	4.9	4.9	6.5	6.5	136
144		5.1	5.1	6.2	6.2	6.5	6.5	3.8	3.8	5.1	5.1	144
152		4.0	4.0	4.9	4.9	5.6	5.6	3.0	3.0	4.0	4.0	152
160		3.1	3.1	3.9	3.9	4.5	4.5	-	-	3.1	3.1	160
168		-	-	-	-	3.5	3.5	-	-	-	-	168
176		-	-	-	-	2.6	2.6	-	-	-	-	176

Operation










HAV






55,100 lb +  33,100 lb		 75.5 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
18	32.9	-	-	-	-	-	-	-	-	-	-	18
20	32.1	26.6	-	-	-	-	-	-	-	-	-	20
24	30.4	25.4	-	-	-	-	-	-	-	-	-	24
28	28.7	24.2	-	-	-	-	-	-	-	-	-	28
32	26.8	23.0	-	-	-	-	-	-	-	-	-	32
36	25.2	21.7	-	-	-	-	-	-	-	-	-	36
40	23.6	20.6	19.0	-	-	-	22.2	19.8	-	-	-	40
48	20.9	18.5	16.7	15.6	-	-	21.2	19.0	-	-	-	48
56	18.5	16.7	14.8	14.0	-	-	20.3	18.2	-	-	-	56
64	16.3	15.1	13.3	12.6	10.1	9.9	19.2	17.4	15.0	-	-	64
72	14.6	13.5	11.9	11.5	9.3	9.1	18.1	16.6	14.1	13.0	-	72
80	13.0	12.2	10.9	10.5	8.7	8.3	17.0	15.7	13.3	12.3	9.6	80
88	11.8	11.1	10.1	9.6	8.1	7.8	16.0	14.8	12.5	11.7	9.2	88
96	10.8	10.2	9.3	9.0	7.7	7.4	15.1	13.9	11.7	11.0	8.8	96
104	10.0	9.4	8.7	8.4	-	-	13.6	13.3	11.1	10.4	8.4	104
112	-	-	-	-	-	-	11.6	11.6	10.6	10.1	8.1	112
120	-	-	-	-	-	-	9.9	9.8	10.1	9.6	7.9	120
128	-	-	-	-	-	-	8.9	8.9	9.5	9.1	7.6	128
136	-	-	-	-	-	-	7.8	7.8	8.2	8.2	7.3	136
144	-	-	-	-	-	-	6.9	6.9	7.3	7.5	7.3	144
152	-	-	-	-	-	-	6.2	6.2	6.5	6.5	6.8	152
160	-	-	-	-	-	-	5.6	5.6	5.8	5.8	6.1	160
168	-	-	-	-	-	-	5.0	5.0	5.1	5.1	-	168
176	-	-	-	-	-	-	4.3	4.3	4.7	4.7	-	176
184	-	-	-	-	-	-	3.6	3.6	-	-	-	184

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
64	14.4	11.2	-	-	-	-	-	-	-	-	-	64
72	14.1	11.2	-	-	-	-	11.7	8.8	-	-	-	72
80	13.8	11.2	-	-	-	-	11.4	8.8	-	-	-	80
88	13.5	11.2	11.5	10.6	-	-	11.2	8.8	-	-	-	88
96	12.8	11.2	11.0	10.2	-	-	10.9	8.8	10.3	-	-	96
104	11.3	11.1	10.4	9.8	8.2	-	10.2	8.8	9.6	8.8	-	104
112	9.4	9.4	9.9	9.5	7.9	7.5	8.5	8.5	9.0	8.8	7.7	112
120	7.9	7.8	9.4	9.1	7.7	7.2	7.0	7.0	8.3	8.3	7.7	120
128	6.9	6.9	8.5	8.4	7.5	7.1	5.6	5.6	7.6	7.6	7.3	128
136	6.0	6.0	7.1	7.1	7.3	6.9	4.4	4.4	6.5	6.5	6.9	136
144	4.9	4.9	5.8	5.8	7.1	6.8	3.4	3.4	5.1	5.1	6.4	144
152	3.9	3.9	5.2	5.2	6.0	6.0	-	-	4.3	4.3	5.6	152
160	3.1	3.1	4.4	4.4	5.0	5.0	-	-	3.3	3.3	4.6	160
168	-	-	3.5	3.5	4.1	4.1	-	-	-	-	3.7	168
176	-	-	2.6	2.6	3.4	3.4	-	-	-	-	2.6	176

Operation

HAV

33,100 lb +  33,100 lb		 16.4 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
10	119.2	111.6	89.3	-	-	-	-	-	-	-	-	10	
12	113.1	106.0	86.0	82.2	-	-	-	-	-	-	-	12	
14	107.3	101.1	83.0	79.5	-	-	-	-	-	-	-	14	
16	102.0	96.4	80.3	77.0	67.3	64.9	-	-	-	-	-	16	
18	97.4	92.4	77.9	74.8	65.7	63.6	-	-	-	-	-	18	
20	93.1	88.6	75.5	72.7	64.1	62.4	-	-	-	-	-	20	
24	85.9	82.2	71.6	69.3	60.5	59.4	-	-	-	-	-	24	
28	79.8	76.7	67.8	65.9	57.5	56.6	75.2	67.3	-	-	-	28	
32	74.6	71.9	63.6	62.4	54.9	54.2	67.1	60.7	62.9	-	-	32	
36	67.3	65.9	59.7	58.8	53.3	52.6	58.9	53.7	58.2	55.4	51.1	36	
40	59.3	59.3	55.6	55.0	-	-	51.5	47.6	53.0	48.6	49.0	48.7	40
48	-	-	-	-	-	-	41.8	39.1	41.7	38.7	42.6	40.1	48
56	-	-	-	-	-	-	32.7	31.8	32.8	32.7	33.4	32.3	56
64	-	-	-	-	-	-	25.9	25.9	26.5	26.4	27.0	27.0	64
72	-	-	-	-	-	-	22.1	22.1	22.5	22.3	22.3	22.3	72
80	-	-	-	-	-	-	18.0	18.0	18.6	18.6	19.1	19.1	80
88	-	-	-	-	-	-	15.3	15.3	15.5	15.5	15.8	15.8	88
96	-	-	-	-	-	-	12.9	12.9	13.3	13.3	13.5	13.5	96
104	-	-	-	-	-	-	10.6	10.6	11.1	11.1	11.1	11.1	104
112	-	-	-	-	-	-	8.9	8.9	9.2	9.2	-	-	112
120	-	-	-	-	-	-	7.4	7.4	7.6	7.6	-	-	120
128	-	-	-	-	-	-	6.2	6.2	-	-	-	-	128

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
48	34.4	28.7	-	-	-	-	26.6	-	-	-	-	48	
56	27.9	26.3	29.1	26.8	29.3	24.2	25.0	22.5	25.1	-	-	56	
64	23.4	21.5	23.5	22.5	24.5	23.4	21.4	20.3	22.2	21.1	22.1	21.4	64
72	19.3	18.6	19.1	18.8	19.9	19.3	17.3	16.8	18.2	17.7	19.0	18.6	72
80	15.5	15.4	16.4	16.2	16.7	16.5	13.9	13.9	14.7	14.6	15.6	15.2	80
88	12.3	12.3	13.1	13.1	13.6	13.6	11.0	11.0	11.9	11.9	12.5	12.5	88
96	9.8	9.8	10.4	10.4	10.9	10.9	8.6	8.6	9.3	9.3	9.9	9.9	96
104	7.7	7.7	8.2	8.2	8.6	8.6	6.6	6.6	7.1	7.1	7.5	7.5	104
112	5.9	5.9	6.3	6.3	6.7	6.7	4.8	4.8	5.4	5.4	5.6	5.6	112
120	4.3	4.3	4.8	4.8	5.0	5.0	3.2	3.2	3.8	3.8	4.1	4.1	120
128	3.1	3.1	3.4	3.4	3.6	3.6	-	-	-	-	-	-	128

Operation

HAV

33,100 lb + 33,100 lb		36.1 ft		19.7 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
ft	0°	0,3°		1°		0,3°		1°		0,3°		1°	
		18°		36°		0°		18°		36°			
1,000 lb													
10	77.9	69.2	-	-	-	-	-	-	-	-	-	-	10
12	73.4	66.0	-	-	-	-	-	-	-	-	-	-	12
14	69.3	62.9	-	-	-	-	-	-	-	-	-	-	14
16	65.6	59.9	-	-	-	-	-	-	-	-	-	-	16
18	62.2	57.2	-	-	-	-	-	-	-	-	-	-	18
20	59.1	54.5	44.9	-	-	-	-	-	-	-	-	-	20
24	53.6	50.1	41.9	39.7	-	-	-	-	-	-	-	-	24
28	49.2	46.2	39.3	37.4	-	-	-	-	-	-	-	-	28
32	45.3	42.9	36.9	35.3	29.0	27.8	51.0	45.2	-	-	-	-	32
36	42.1	40.1	34.9	33.3	27.5	26.4	49.3	44.1	-	-	-	-	36
40	39.1	37.4	33.0	31.5	26.0	24.9	47.3	42.7	37.4	-	-	-	40
48	34.7	33.2	29.1	28.1	23.5	22.7	39.7	36.9	34.3	33.2	-	-	48
56	30.8	29.6	26.2	25.4	22.0	21.4	32.0	30.2	31.6	30.9	25.1	24.4	56
64	27.2	26.2	24.1	23.5	-	-	26.3	25.9	27.3	26.8	23.8	23.4	64
72	-	-	-	-	-	-	21.5	21.5	22.6	22.6	22.5	22.5	72
80	-	-	-	-	-	-	18.2	18.2	18.8	18.8	19.0	19.0	80
88	-	-	-	-	-	-	15.8	15.8	16.2	15.5	16.3	16.3	88
96	-	-	-	-	-	-	13.1	13.1	13.4	13.4	13.9	13.9	96
104	-	-	-	-	-	-	11.4	11.4	11.7	11.7	12.2	12.2	104
112	-	-	-	-	-	-	9.6	9.6	9.9	9.9	10.3	10.3	112
120	-	-	-	-	-	-	8.1	8.1	8.7	8.7	8.8	8.8	120
128	-	-	-	-	-	-	6.7	6.7	7.2	7.2	4.5	4.5	128
136	-	-	-	-	-	-	5.5	5.5	6.0	6.0	-	-	136
144	-	-	-	-	-	-	4.7	4.7	4.9	4.9	-	-	144

		181.1 ft				196.9 ft							
ft	0°	0,3°		1°		0,3°		1°		0,3°		1°	
		18°		36°		0°		18°		36°			
1,000 lb													
56	25.1	21.4	-	-	-	-	20.6	17.0	-	-	-	-	56
64	22.3	20.6	-	-	-	-	19.8	17.0	-	-	-	-	64
72	18.4	17.5	19.9	19.2	-	-	17.3	16.5	17.9	-	-	-	72
80	15.6	15.4	16.6	16.1	17.3	17.3	13.9	13.7	15.8	15.5	15.7	15.7	80
88	12.5	12.5	14.0	13.8	15.0	14.7	11.0	11.0	12.7	12.7	14.0	14.0	88
96	10.1	10.1	11.5	11.5	12.6	12.6	8.6	8.6	10.1	10.1	11.5	11.5	96
104	8.2	8.2	9.5	9.5	10.4	10.4	6.6	6.6	8.0	8.0	9.3	9.3	104
112	6.5	6.5	7.6	7.6	8.5	8.5	5.0	5.0	6.3	6.3	7.4	7.4	112
120	5.0	5.0	6.0	6.0	6.7	6.7	3.7	3.7	4.8	4.8	5.8	5.8	120
128	3.7	3.7	4.5	4.5	5.2	5.2	-	-	3.5	3.5	4.3	4.3	128
136	2.5	2.5	3.3	3.3	3.8	3.8	-	-	-	-	2.9	2.9	136
144	-	-	-	-	2.7	2.7	-	-	-	-	-	-	144

Operation

33,100 lb + 33,100 lb		55.8 ft		19.7 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
													0°
1,000 lb													
14	49.3	-	-	-	-	-	-	-	-	-	-	14	
16	47.3	41.7	-	-	-	-	-	-	-	-	-	16	
18	45.5	40.4	-	-	-	-	-	-	-	-	-	18	
20	43.6	39.0	-	-	-	-	-	-	-	-	-	20	
24	40.0	36.3	-	-	-	-	-	-	-	-	-	24	
28	36.8	33.8	-	-	-	-	-	-	-	-	-	28	
32	34.1	31.5	26.4	-	-	-	-	-	-	-	-	32	
36	31.7	29.5	24.8	23.6	-	-	33.9	28.3	-	-	-	36	
40	29.5	27.5	23.4	22.3	-	-	32.9	27.7	-	-	-	40	
48	25.8	24.4	21.0	20.1	16.1	15.5	30.8	26.3	-	-	-	48	
56	22.9	21.7	18.9	17.9	14.6	14.1	28.9	25.0	22.1	20.7	-	56	
64	20.3	19.2	16.9	16.2	13.4	13.0	26.0	23.6	20.8	19.5	-	64	
72	18.1	17.2	15.5	14.8	12.6	12.1	21.9	20.6	19.6	18.3	14.3	13.7	72
80	16.3	15.7	14.2	13.8	-	-	18.4	18.1	18.3	17.3	13.8	13.1	80
88	-	-	-	-	-	-	15.6	15.2	16.3	16.0	13.3	12.6	88
96	-	-	-	-	-	-	13.3	13.1	14.1	14.1	12.7	12.2	96
104	-	-	-	-	-	-	11.4	11.4	11.8	11.8	12.2	11.8	104
112	-	-	-	-	-	-	10.0	10.0	10.5	10.5	10.9	10.9	112
120	-	-	-	-	-	-	8.4	8.4	9.2	9.2	9.5	9.5	120
128	-	-	-	-	-	-	7.5	7.5	7.9	7.9	8.3	8.3	128
136	-	-	-	-	-	-	6.3	6.3	6.8	6.8	7.1	7.1	136
144	-	-	-	-	-	-	5.3	5.3	5.8	5.8	6.2	6.2	144
152	-	-	-	-	-	-	4.3	4.3	4.7	4.7	-	-	152
160	-	-	-	-	-	-	3.6	3.6	3.9	3.9	-	-	160

		181.1 ft				196.9 ft							
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
													0°
1,000 lb													
56	19.6	15.7	-	-	-	-	-	-	-	-	-	56	
64	19.2	15.7	-	-	-	-	15.8	12.6	-	-	-	64	
72	18.1	15.7	-	-	-	-	15.4	12.6	-	-	-	72	
80	14.9	14.5	15.5	15.3	-	-	13.6	12.4	14.2	-	-	80	
88	12.6	12.6	14.0	14.0	12.8	12.0	10.9	10.9	12.9	12.4	-	88	
96	10.4	10.4	11.8	11.8	12.3	11.8	8.6	8.6	11.0	11.0	11.2	11.2	96
104	8.4	8.4	10.2	10.2	11.4	11.3	6.8	6.8	8.9	8.9	10.6	10.6	104
112	6.7	6.7	8.5	8.5	9.6	9.6	5.2	5.2	7.0	7.0	8.7	8.7	112
120	5.3	5.3	6.9	6.9	8.3	8.3	3.9	3.9	5.6	5.6	7.1	7.1	120
128	4.2	4.2	5.5	5.5	6.8	6.8	2.6	2.6	4.3	4.3	5.6	5.6	128
136	3.1	3.1	4.4	4.4	5.4	5.4	-	-	3.1	3.1	4.4	4.4	136
144	-	-	3.4	3.4	4.2	4.2	-	-	-	-	3.1	3.1	144
152	-	-	-	-	3.2	3.2	-	-	-	-	-	-	152

Operation










HAV






33,100 lb + 33,100 lb		75.5 ft		19.7 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
													0°
1,000 lb													
18	32.9	-	-	-	-	-	-	-	-	-	-	-	18
20	32.1	26.6	-	-	-	-	-	-	-	-	-	-	20
24	30.4	25.4	-	-	-	-	-	-	-	-	-	-	24
28	28.7	24.2	-	-	-	-	-	-	-	-	-	-	28
32	26.8	23.0	-	-	-	-	-	-	-	-	-	-	32
36	25.2	21.7	-	-	-	-	-	-	-	-	-	-	36
40	23.6	20.6	19.0	-	-	-	22.2	19.8	-	-	-	-	40
48	20.9	18.5	16.7	15.6	-	-	21.2	19.0	-	-	-	-	48
56	18.5	16.7	14.8	14.0	-	-	20.3	18.2	-	-	-	-	56
64	16.3	15.1	13.3	12.6	10.1	9.9	19.2	17.4	15.0	-	-	-	64
72	14.6	13.5	11.9	11.5	9.3	9.1	18.1	16.6	14.1	13.0	-	-	72
80	13.0	12.2	10.9	10.5	8.7	8.3	16.8	15.7	13.3	12.3	9.6	9.2	80
88	11.8	11.1	10.1	9.6	8.1	7.8	15.1	14.4	12.5	11.7	9.2	8.7	88
96	10.8	10.2	9.3	9.0	7.7	7.4	12.9	12.8	11.7	11.0	8.8	8.3	96
104	10.0	9.4	8.7	8.4	-	-	11.2	11.0	11.1	10.4	8.4	8.0	104
112	-	-	-	-	-	-	9.6	9.6	10.5	9.9	8.1	7.7	112
120	-	-	-	-	-	-	8.3	8.3	9.1	9.1	7.9	7.4	120
128	-	-	-	-	-	-	7.3	7.3	8.0	8.0	7.6	7.3	128
136	-	-	-	-	-	-	6.3	6.3	7.0	7.0	7.1	7.1	136
144	-	-	-	-	-	-	5.3	5.3	6.0	6.0	6.2	6.2	144
152	-	-	-	-	-	-	4.5	4.5	5.2	5.2	5.6	5.6	152
160	-	-	-	-	-	-	3.7	3.7	4.4	4.4	4.7	4.7	160
168	-	-	-	-	-	-	3.0	3.0	3.6	3.6	-	-	168
176	-	-	-	-	-	-	2.3	2.3	2.8	2.8	-	-	176

		181.1 ft				196.9 ft							
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
													0°
1,000 lb													
64	14.4	11.2	-	-	-	-	-	-	-	-	-	-	64
72	14.1	11.2	-	-	-	-	11.7	8.8	-	-	-	-	72
80	13.5	11.2	-	-	-	-	11.4	8.8	-	-	-	-	80
88	11.5	10.7	11.5	10.6	-	-	10.2	8.8	-	-	-	-	88
96	9.6	9.6	11.0	10.2	-	-	7.9	7.8	10.3	-	-	-	96
104	7.7	7.7	9.7	9.6	8.2	-	6.2	6.2	8.8	8.6	-	-	104
112	6.1	6.1	8.5	8.5	7.9	7.5	4.6	4.6	7.2	7.2	7.7	7.3	112
120	4.8	4.8	7.0	7.0	7.7	7.2	3.3	3.3	5.6	5.6	7.5	7.0	120
128	3.5	3.5	5.6	5.6	7.1	6.9	-	-	4.3	4.3	6.3	6.3	128
136	2.6	2.6	4.4	4.4	6.0	6.0	-	-	3.1	3.1	4.9	4.9	136
144	-	-	3.4	3.4	4.9	4.9	-	-	-	-	3.8	3.8	144
152	-	-	-	-	3.8	3.8	-	-	-	-	-	-	152
160	-	-	-	-	2.8	2.8	-	-	-	-	-	-	160

Operation










HAV






11,000 lb +  33,100 lb		 16.4 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
10	119.2	111.6	89.3	-	-	-	-	-	-	-	-	10	
12	113.1	106.0	86.0	82.2	-	-	-	-	-	-	-	12	
14	107.3	101.1	83.0	79.5	-	-	-	-	-	-	-	14	
16	102.0	96.4	80.3	77.0	67.3	64.9	-	-	-	-	-	16	
18	97.4	92.4	77.9	74.8	65.7	63.6	-	-	-	-	-	18	
20	93.1	88.6	75.5	72.7	64.1	62.4	-	-	-	-	-	20	
24	85.9	82.2	71.6	69.3	60.5	59.4	-	-	-	-	-	24	
28	79.8	76.7	67.8	65.9	57.5	56.6	63.0	56.5	-	-	-	28	
32	68.5	67.8	63.6	62.4	54.9	54.2	54.9	49.6	55.7	46.7	-	32	
36	56.9	56.9	56.1	55.5	52.2	51.9	48.0	43.9	48.0	45.3	48.1	36	
40	46.8	46.8	47.8	47.8	-	-	41.3	39.2	43.0	39.4	42.8	40.9	40
48	-	-	-	-	-	-	33.0	32.0	33.2	32.1	34.4	32.5	48
56	-	-	-	-	-	-	26.5	26.0	26.9	26.8	27.4	26.9	56
64	-	-	-	-	-	-	21.1	21.1	21.6	21.6	22.1	22.1	64
72	-	-	-	-	-	-	16.6	16.6	17.3	17.3	17.7	17.7	72
80	-	-	-	-	-	-	13.2	13.2	13.9	13.9	14.3	14.3	80
88	-	-	-	-	-	-	10.6	10.6	11.1	11.1	11.3	11.3	88
96	-	-	-	-	-	-	8.5	8.5	8.8	8.8	9.0	9.0	96
104	-	-	-	-	-	-	6.6	6.6	7.0	7.0	7.1	7.1	104
112	-	-	-	-	-	-	5.2	5.2	5.4	5.4	-	-	112
120	-	-	-	-	-	-	3.9	3.9	4.2	4.2	-	-	120
128	-	-	-	-	-	-	3.0	3.0	-	-	-	-	128

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
48	26.8	24.8	-	-	-	-	24.2	-	-	-	-	48	
56	20.9	19.8	22.1	20.9	23.1	21.9	18.6	17.7	19.8	-	-	56	
64	16.3	15.8	17.4	16.9	18.1	17.6	14.3	13.9	15.4	15.0	16.3	15.8	64
72	12.6	12.6	13.5	13.5	14.4	14.2	10.9	10.9	11.8	11.8	12.6	12.6	72
80	9.7	9.7	10.6	10.6	11.3	11.3	8.0	8.0	8.9	8.9	9.5	9.5	80
88	7.2	7.2	8.1	8.1	8.7	8.7	5.7	5.7	6.6	6.6	7.1	7.1	88
96	5.3	5.3	5.9	5.9	6.4	6.4	3.8	3.8	4.5	4.5	5.0	5.0	96
104	3.7	3.7	4.2	4.2	4.6	4.6	-	-	2.8	2.8	3.3	3.3	104

Operation










HAV






11,000 lb +  33,100 lb		 36.1 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
10		77.9	69.2	-	-	-	-	-	-	-	-	10
12		73.4	66.0	-	-	-	-	-	-	-	-	12
14		69.3	62.9	-	-	-	-	-	-	-	-	14
16		65.6	59.9	-	-	-	-	-	-	-	-	16
18		62.2	57.2	-	-	-	-	-	-	-	-	18
20		59.1	54.5	44.9	-	-	-	-	-	-	-	20
24		53.6	50.1	41.9	39.7	-	-	-	-	-	-	24
28		49.2	46.2	39.3	37.4	-	-	-	-	-	-	28
32		45.3	42.9	36.9	35.3	29.0	27.8	50.4	44.7	-	-	32
36		42.1	40.1	34.9	33.3	27.5	26.4	45.1	40.8	-	-	36
40		39.1	37.4	33.0	31.5	26.0	24.9	40.7	36.9	37.4	-	40
48		34.6	33.2	29.1	28.1	23.5	22.7	31.7	30.4	33.0	31.7	48
56		29.1	28.6	26.2	25.4	22.0	21.4	26.3	25.2	27.5	25.9	56
64		23.1	23.1	23.3	23.1	-	-	21.5	21.2	22.4	21.5	64
72		-	-	-	-	-	-	17.5	17.5	18.0	17.9	72
80		-	-	-	-	-	-	14.1	14.1	15.2	15.2	80
88		-	-	-	-	-	-	11.5	11.5	12.5	12.5	88
96		-	-	-	-	-	-	9.2	9.2	10.1	10.1	96
104		-	-	-	-	-	-	7.5	7.5	8.2	8.2	104
112		-	-	-	-	-	-	5.9	5.9	6.5	6.5	112
120		-	-	-	-	-	-	4.6	4.6	5.2	5.2	120
128		-	-	-	-	-	-	3.5	3.5	4.0	4.0	128
136		-	-	-	-	-	-	2.6	2.6	3.0	3.0	136

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
48		23.5	-	-	-	-	-	-	-	-	-	48
56		20.8	19.1	-	-	-	-	18.7	16.4	-	-	56
64		16.5	15.7	18.5	-	-	-	14.5	13.9	-	-	64
72		12.6	12.6	14.6	14.4	16.6	-	10.9	10.9	13.1	-	72
80		9.7	9.7	11.5	11.5	13.2	13.0	8.0	8.0	9.9	9.9	80
88		7.3	7.3	8.9	8.9	10.4	10.4	5.7	5.7	7.4	7.4	88
96		5.4	5.4	6.7	6.7	8.1	8.1	3.8	3.8	5.4	5.4	96
104		3.7	3.7	5.0	5.0	6.2	6.2	-	-	3.5	3.5	104
112		-	-	3.5	3.5	4.6	4.6	-	-	-	-	112
120		-	-	-	-	3.2	3.2	-	-	-	-	120

Operation










HAV






11,000 lb +  33,100 lb		 55.8 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
14		49.3	-	-	-	-	-	-	-	-	-	14
16		47.3	41.7	-	-	-	-	-	-	-	-	16
18		45.5	40.4	-	-	-	-	-	-	-	-	18
20		43.6	39.0	-	-	-	-	-	-	-	-	20
24		40.0	36.3	-	-	-	-	-	-	-	-	24
28		36.8	33.8	-	-	-	-	-	-	-	-	28
32		34.1	31.5	26.4	-	-	-	-	-	-	-	32
36		31.7	29.5	24.8	23.6	-	-	33.9	28.3	-	-	36
40		29.5	27.5	23.4	22.3	-	-	32.9	27.7	-	-	40
48		25.8	24.4	21.0	20.1	16.1	15.5	29.9	25.9	-	-	48
56		22.9	21.7	18.9	17.9	14.6	14.1	25.7	23.2	22.1	20.7	56
64		20.3	19.2	16.9	16.2	13.4	13.0	21.1	20.2	20.8	19.5	64
72		18.1	17.2	15.5	14.8	12.6	12.1	17.1	17.0	18.8	18.1	72
80		16.3	15.7	14.2	13.8	-	-	14.7	14.6	15.7	15.7	80
88		-	-	-	-	-	-	12.4	12.4	13.0	13.0	88
96		-	-	-	-	-	-	10.1	10.1	11.3	11.3	96
104		-	-	-	-	-	-	8.2	8.2	9.5	9.5	104
112		-	-	-	-	-	-	6.8	6.8	7.8	7.8	112
120		-	-	-	-	-	-	5.4	5.4	6.3	6.3	120
128		-	-	-	-	-	-	4.2	4.2	5.1	5.1	128
136		-	-	-	-	-	-	3.3	3.3	4.0	4.0	136
144		-	-	-	-	-	-	2.5	2.5	3.1	3.1	144

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
56		18.9	15.7	-	-	-	-	-	-	-	-	56
64		15.8	14.9	-	-	-	-	13.9	12.6	-	-	64
72		12.4	12.4	-	-	-	-	10.7	10.6	-	-	72
80		9.5	9.5	12.4	12.4	-	-	7.8	7.8	10.8	-	80
88		7.3	7.3	9.8	9.8	11.6	11.6	5.7	5.7	8.2	8.2	88
96		5.4	5.4	7.6	7.6	9.7	9.7	3.8	3.8	6.1	6.1	96
104		3.9	3.9	5.7	5.7	7.7	7.7	-	-	4.4	4.4	104
112		-	-	4.3	4.3	5.9	5.9	-	-	-	-	112
120		-	-	3.1	3.1	4.5	4.5	-	-	-	-	120
128		-	-	-	-	3.3	3.3	-	-	-	-	128

Operation










HAV






11,000 lb +  33,100 lb		 75.5 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
18		32.9	-	-	-	-	-	-	-	-	-	18
20		32.1	26.6	-	-	-	-	-	-	-	-	20
24		30.4	25.4	-	-	-	-	-	-	-	-	24
28		28.7	24.2	-	-	-	-	-	-	-	-	28
32		26.8	23.0	-	-	-	-	-	-	-	-	32
36		25.2	21.7	-	-	-	-	-	-	-	-	36
40		23.6	20.6	19.0	-	-	-	22.2	19.8	-	-	40
48		20.9	18.5	16.7	15.6	-	-	21.2	19.0	-	-	48
56		18.5	16.7	14.8	14.0	-	-	20.3	18.2	-	-	56
64		16.3	15.1	13.3	12.6	10.1	9.9	18.7	17.1	15.0	-	64
72		14.6	13.5	11.9	11.5	9.3	9.1	16.4	15.7	14.1	13.0	72
80		13.0	12.2	10.9	10.5	8.7	8.3	13.7	13.6	13.3	12.3	80
88		11.8	11.1	10.1	9.6	8.1	7.8	12.0	11.8	12.3	11.5	88
96		10.8	10.2	9.3	9.0	7.7	7.4	9.8	9.8	11.1	10.8	96
104		10.0	9.4	8.7	8.4	-	-	8.1	8.1	9.6	9.6	104
112		-	-	-	-	-	-	6.8	6.8	8.5	8.5	112
120		-	-	-	-	-	-	5.6	5.6	7.0	7.0	120
128		-	-	-	-	-	-	4.4	4.4	5.7	5.7	128
136		-	-	-	-	-	-	3.5	3.5	4.5	4.5	136
144		-	-	-	-	-	-	2.7	2.7	3.6	3.6	144
152		-	-	-	-	-	-	-	-	-	-	152

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
64		13.7	11.2	-	-	-	-	-	-	-	-	64
72		11.5	10.8	-	-	-	-	9.5	8.8	-	-	72
80		8.9	8.9	-	-	-	-	6.9	6.9	-	-	80
88		6.6	6.6	9.8	9.8	-	-	4.9	4.9	-	-	88
96		4.8	4.8	7.6	7.6	-	-	3.1	3.1	6.3	-	96
104		3.3	3.3	5.9	5.9	8.2	-	-	-	4.4	-	104
112		-	-	4.3	4.3	6.5	6.5	-	-	-	-	112
120		-	-	3.1	3.1	5.2	5.2	-	-	-	-	120
128		-	-	-	-	3.9	3.9	-	-	-	-	128
136		-	-	-	-	2.7	2.7	-	-	-	-	136

Operation










HAV






0 lb +  33,100 lb		 16.4 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5				
		 42.3 ft				 126.0 ft								
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		36°		
ft		1,000 lb												ft
10	119.2	111.6	89.3	-	-	-	-	-	-	-	-	-	-	10
12	113.1	106.0	86.0	82.2	-	-	-	-	-	-	-	-	-	12
14	107.3	101.1	83.0	79.5	-	-	-	-	-	-	-	-	-	14
16	102.0	96.4	80.3	77.0	67.3	64.9	-	-	-	-	-	-	-	16
18	97.4	92.4	77.9	74.8	65.7	63.6	-	-	-	-	-	-	-	18
20	93.1	88.6	75.5	72.7	64.1	62.4	-	-	-	-	-	-	-	20
24	85.9	82.2	71.6	69.3	60.5	59.4	-	-	-	-	-	-	-	24
28	75.4	73.9	67.8	65.9	57.5	56.6	56.9	50.9	-	-	-	-	-	28
32	60.3	60.3	61.0	60.6	54.9	54.2	48.7	44.9	50.2	44.7	-	-	-	32
36	49.6	49.6	51.2	51.2	49.1	48.8	42.6	39.8	43.1	40.4	44.3	38.8	-	36
40	40.5	40.5	41.5	41.5	-	-	37.9	35.5	38.3	36.0	38.5	36.6	-	40
48	-	-	-	-	-	-	29.9	27.9	30.5	29.0	30.5	29.6	-	48
56	-	-	-	-	-	-	23.0	22.4	24.1	23.3	24.6	24.2	-	56
64	-	-	-	-	-	-	17.5	17.5	18.4	18.4	19.1	19.1	-	64
72	-	-	-	-	-	-	13.5	13.5	14.2	14.2	14.9	14.9	-	72
80	-	-	-	-	-	-	10.6	10.6	11.1	11.1	11.5	11.5	-	80
88	-	-	-	-	-	-	8.2	8.2	8.8	8.8	9.0	9.0	-	88
96	-	-	-	-	-	-	6.3	6.3	6.7	6.7	7.0	7.0	-	96
104	-	-	-	-	-	-	4.6	4.6	5.0	5.0	5.3	5.3	-	104
112	-	-	-	-	-	-	3.5	3.5	3.7	3.7	-	-	-	112

		 181.1 ft				 196.9 ft								
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		36°		
ft		1,000 lb												ft
48	22.1	20.6	-	-	-	-	19.7	-	-	-	-	-	-	48
56	16.7	16.1	17.9	17.2	18.9	18.2	14.6	14.2	15.9	-	-	-	-	56
64	12.7	12.6	13.6	13.5	14.5	14.2	10.7	10.6	11.8	11.7	12.7	12.6	-	64
72	9.3	9.3	10.2	10.2	11.1	11.1	7.6	7.6	8.7	8.7	9.3	9.3	-	72
80	6.9	6.9	7.6	7.6	8.2	8.2	5.2	5.2	6.0	6.0	6.7	6.7	-	80
88	4.7	4.7	5.4	5.4	6.0	6.0	-	-	3.8	3.8	4.4	4.4	-	88
96	2.9	2.9	3.6	3.6	4.1	4.1	-	-	-	-	-	-	-	96
104	-	-	-	-	2.4	2.4	-	-	-	-	-	-	-	104

Operation










HAV






0 lb +  33,100 lb		 36.1 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5				
		 42.3 ft				 126.0 ft								
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		36°		
ft		1,000 lb												ft
10		77.9	69.2	-	-	-	-	-	-	-	-	-	-	10
12		73.4	66.0	-	-	-	-	-	-	-	-	-	-	12
14		69.3	62.9	-	-	-	-	-	-	-	-	-	-	14
16		65.6	59.9	-	-	-	-	-	-	-	-	-	-	16
18		62.2	57.2	-	-	-	-	-	-	-	-	-	-	18
20		59.1	54.5	44.9	-	-	-	-	-	-	-	-	-	20
24		53.6	50.1	41.9	39.7	-	-	-	-	-	-	-	-	24
28		49.2	46.2	39.3	37.4	-	-	-	-	-	-	-	-	28
32		45.3	42.9	36.9	35.3	29.0	27.8	46.6	39.7	-	-	-	-	32
36		42.1	40.1	34.9	33.3	27.5	26.4	40.5	36.5	-	-	-	-	36
40		39.0	37.4	33.0	31.5	26.0	24.9	36.1	33.8	36.8	-	-	-	40
48		32.8	32.2	29.1	28.1	23.5	22.7	28.8	27.4	29.7	27.5	-	-	48
56		25.1	25.1	25.5	25.0	22.0	21.4	23.7	22.2	24.3	22.8	24.3	23.2	56
64		19.7	19.7	20.5	20.5	-	-	18.6	18.2	19.4	19.4	20.4	19.8	64
72		-	-	-	-	-	-	14.6	14.6	16.0	16.0	17.0	16.8	72
80		-	-	-	-	-	-	11.5	11.5	12.8	12.8	13.9	13.9	80
88		-	-	-	-	-	-	9.0	9.0	10.2	10.2	11.1	11.1	88
96		-	-	-	-	-	-	7.1	7.1	8.1	8.1	8.8	8.8	96
104		-	-	-	-	-	-	5.5	5.5	6.2	6.2	6.8	6.8	104
112		-	-	-	-	-	-	4.1	4.1	4.8	4.8	5.2	5.2	112
120		-	-	-	-	-	-	3.1	3.1	3.5	3.5	3.9	3.9	120

		 181.1 ft				 196.9 ft								
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		36°		
ft		1,000 lb												ft
48		21.9	-	-	-	-	-	-	-	-	-	-	-	48
56		16.9	15.8	-	-	-	-	14.9	13.9	-	-	-	-	56
64		12.7	12.3	15.1	-	-	-	10.9	10.6	-	-	-	-	64
72		9.3	9.3	11.3	11.3	13.3	-	7.6	7.6	9.8	-	-	-	72
80		6.7	6.7	8.7	8.7	10.2	10.2	5.0	5.0	6.9	6.9	8.8	8.8	80
88		4.7	4.7	6.3	6.3	7.8	7.8	-	-	4.8	4.8	6.3	6.3	88
96		2.9	2.9	4.5	4.5	5.6	5.6	-	-	2.9	2.9	4.3	4.3	96
104		-	-	2.8	2.8	3.9	3.9	-	-	-	-	2.6	2.6	104

Operation










HAV






0 lb +  33,100 lb		 55.8 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5				
		 42.3 ft				 126.0 ft								
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		36°		
ft		1,000 lb												ft
14	49.3	-	-	-	-	-	-	-	-	-	-	-	-	14
16	47.3	41.7	-	-	-	-	-	-	-	-	-	-	-	16
18	45.5	40.4	-	-	-	-	-	-	-	-	-	-	-	18
20	43.6	39.0	-	-	-	-	-	-	-	-	-	-	-	20
24	40.0	36.3	-	-	-	-	-	-	-	-	-	-	-	24
28	36.8	33.8	-	-	-	-	-	-	-	-	-	-	-	28
32	34.1	31.5	26.4	-	-	-	-	-	-	-	-	-	-	32
36	31.7	29.5	24.8	23.6	-	-	33.9	28.3	-	-	-	-	-	36
40	29.5	27.5	23.4	22.3	-	-	32.4	27.4	-	-	-	-	-	40
48	25.8	24.4	21.0	20.1	16.1	15.5	27.9	24.5	-	-	-	-	-	48
56	22.9	21.7	18.9	17.9	14.6	14.1	22.2	21.0	21.9	20.4	-	-	-	56
64	20.3	19.2	16.9	16.2	13.4	13.0	18.5	18.0	19.4	18.8	-	-	-	64
72	17.5	17.2	15.5	14.8	12.6	12.1	14.9	14.8	16.2	15.9	14.3	13.7	-	72
80	14.4	14.4	14.2	13.8	-	-	12.2	12.2	13.9	13.9	13.6	13.1	-	80
88	-	-	-	-	-	-	9.9	9.9	11.5	11.5	12.3	12.1	-	88
96	-	-	-	-	-	-	7.8	7.8	9.4	9.4	10.6	10.6	-	96
104	-	-	-	-	-	-	6.3	6.3	7.5	7.5	8.6	8.6	-	104
112	-	-	-	-	-	-	4.8	4.8	6.1	6.1	7.0	7.0	-	112
120	-	-	-	-	-	-	3.7	3.7	4.8	4.8	5.4	5.4	-	120
128	-	-	-	-	-	-	2.6	2.6	3.5	3.5	4.2	4.2	-	128
136	-	-	-	-	-	-	-	-	2.6	2.6	3.1	3.1	-	136

		 181.1 ft				 196.9 ft								
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		36°		
ft		1,000 lb												ft
56	16.4	14.7	-	-	-	-	-	-	-	-	-	-	-	56
64	12.5	12.3	-	-	-	-	10.5	10.4	-	-	-	-	-	64
72	9.1	9.1	-	-	-	-	7.3	7.3	-	-	-	-	-	72
80	6.7	6.7	9.3	9.3	-	-	5.0	5.0	7.8	-	-	-	-	80
88	4.7	4.7	7.1	7.1	9.4	9.4	3.0	3.0	5.7	-	-	-	-	88
96	3.1	3.1	5.2	5.2	7.3	7.3	-	-	3.8	-	-	5.9	-	96
104	-	-	3.7	3.7	5.5	5.5	-	-	-	-	4.2	-	-	104
112	-	-	-	-	3.9	3.9	-	-	-	-	-	-	-	112

Operation










HAV






0 lb +  33,100 lb		 75.5 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
18		32.9	-	-	-	-	-	-	-	-	-	18
20		32.1	26.6	-	-	-	-	-	-	-	-	20
24		30.4	25.4	-	-	-	-	-	-	-	-	24
28		28.7	24.2	-	-	-	-	-	-	-	-	28
32		26.8	23.0	-	-	-	-	-	-	-	-	32
36		25.2	21.7	-	-	-	-	-	-	-	-	36
40		23.6	20.6	19.0	-	-	-	22.2	19.8	-	-	40
48		20.9	18.5	16.7	15.6	-	-	21.2	19.0	-	-	48
56		18.5	16.7	14.8	14.0	-	-	19.4	17.7	-	-	56
64		16.3	15.1	13.3	12.6	10.1	9.9	16.9	16.3	15.0	-	64
72		14.6	13.5	11.9	11.5	9.3	9.1	14.2	14.2	14.1	13.0	72
80		13.0	12.2	10.9	10.5	8.7	8.3	11.5	11.5	12.8	12.1	80
88		11.8	11.1	10.1	9.6	8.1	7.8	9.3	9.3	11.0	11.0	88
96		10.7	10.2	9.3	9.0	7.7	7.4	7.5	7.5	9.6	9.6	96
104		9.2	9.2	8.7	8.4	-	-	6.1	6.1	7.9	7.9	104
112		-	-	-	-	-	-	4.8	4.8	6.5	6.5	112
120		-	-	-	-	-	-	3.8	3.8	5.3	5.3	120
128		-	-	-	-	-	-	2.9	2.9	4.2	4.2	128
136		-	-	-	-	-	-	-	-	3.1	3.1	136
144		-	-	-	-	-	-	-	-	-	-	144

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
64		11.3	10.6	-	-	-	-	-	-	-	-	64
72		8.2	8.2	-	-	-	-	6.5	6.5	-	-	72
80		5.9	5.9	-	-	-	-	4.1	4.1	-	-	80
88		4.0	4.0	7.2	7.2	-	-	-	-	-	-	88
96		-	-	5.2	5.2	-	-	-	-	-	-	96
104		-	-	3.7	3.7	6.2	-	-	-	-	-	104
112		-	-	-	-	4.6	4.6	-	-	-	-	112
120		-	-	-	-	3.3	3.3	-	-	-	-	120

Operation










HAV






99,200 lb +  33,100 lb		 16.4 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
10	119.2	111.6	89.3	-	-	-	-	-	-	-	-	10	
12	113.1	106.0	86.0	82.2	-	-	-	-	-	-	-	12	
14	107.3	101.1	83.0	79.5	-	-	-	-	-	-	-	14	
16	102.0	96.4	80.3	77.0	67.3	64.9	-	-	-	-	-	16	
18	97.4	92.4	77.9	74.8	65.7	63.6	-	-	-	-	-	18	
20	93.1	88.6	75.5	72.7	64.1	62.4	-	-	-	-	-	20	
24	85.9	82.2	71.6	69.3	60.5	59.4	-	-	-	-	-	24	
28	79.8	76.7	67.8	65.9	57.5	56.6	75.2	68.1	-	-	-	28	
32	74.6	71.9	63.6	62.4	54.9	54.2	67.2	66.1	62.9	-	-	32	
36	69.8	67.7	59.7	58.8	53.3	52.6	61.1	61.0	58.8	58.6	51.1	36	
40	64.7	63.4	56.1	55.4	-	-	55.5	55.5	54.6	54.4	49.0	49.0	40
48	-	-	-	-	-	-	46.8	46.6	46.0	45.9	44.1	44.0	48
56	-	-	-	-	-	-	39.0	38.9	39.3	39.3	38.6	38.5	56
64	-	-	-	-	-	-	33.2	32.9	32.6	32.5	32.9	32.9	64
72	-	-	-	-	-	-	27.5	27.5	28.1	28.1	27.4	27.4	72
80	-	-	-	-	-	-	23.2	23.2	23.7	23.7	24.1	24.1	80
88	-	-	-	-	-	-	19.7	19.7	20.1	20.1	20.5	20.5	88
96	-	-	-	-	-	-	17.2	17.2	17.1	17.1	17.4	17.4	96
104	-	-	-	-	-	-	15.8	15.8	15.6	15.6	15.6	15.6	104
112	-	-	-	-	-	-	13.8	13.8	14.0	14.0	-	-	112
120	-	-	-	-	-	-	12.2	12.2	12.4	12.4	-	-	120
128	-	-	-	-	-	-	10.9	10.9	-	-	-	-	128

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
48	35.2	28.7	-	-	-	-	26.6	-	-	-	-	48	
56	31.2	27.8	30.4	27.5	29.7	-	25.0	22.5	25.1	-	-	56	
64	27.4	25.3	26.9	25.0	26.6	24.6	22.4	21.3	22.2	21.4	22.1	21.4	64
72	24.1	22.3	23.9	22.1	23.9	22.1	19.7	19.2	19.7	19.4	19.5	19.4	72
80	21.1	19.5	21.2	19.7	21.2	19.5	17.3	17.1	17.3	17.3	17.5	17.3	80
88	18.3	17.1	18.6	17.4	18.8	17.4	15.1	14.9	15.2	15.1	15.5	15.4	88
96	15.6	15.1	16.0	15.3	16.4	15.3	13.1	13.1	13.4	13.3	13.6	13.4	96
104	13.3	13.2	13.7	13.5	14.0	13.6	11.4	11.4	11.7	11.7	11.9	11.9	104
112	11.2	11.1	11.6	11.6	11.8	11.8	10.1	10.1	10.3	10.3	10.3	10.3	112
120	10.0	9.3	9.7	9.7	9.9	9.9	8.8	8.8	9.0	9.0	9.0	9.0	120
128	8.4	8.3	8.4	8.4	8.5	8.5	7.5	7.5	7.8	7.8	7.9	7.9	128
136	6.9	6.9	7.3	7.3	7.5	7.5	6.0	6.0	6.3	6.3	6.5	6.5	136
144	5.8	5.8	6.0	6.0	6.2	6.2	4.7	4.7	5.1	5.1	5.1	5.1	144
152	4.7	4.7	4.9	4.9	4.9	4.9	3.6	3.6	3.8	3.8	4.0	4.0	152
160	3.7	3.7	3.9	3.9	-	-	-	-	2.8	2.8	3.0	3.0	160

Operation

HAV

99,200 lb +  33,100 lb		 36.1 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
10	77.9	69.2	-	-	-	-	-	-	-	-	-	10
12	73.4	66.0	-	-	-	-	-	-	-	-	-	12
14	69.3	62.9	-	-	-	-	-	-	-	-	-	14
16	65.6	59.9	-	-	-	-	-	-	-	-	-	16
18	62.2	57.2	-	-	-	-	-	-	-	-	-	18
20	59.1	54.5	44.9	-	-	-	-	-	-	-	-	20
24	53.6	50.1	41.9	39.7	-	-	-	-	-	-	-	24
28	49.2	46.2	39.3	37.4	-	-	-	-	-	-	-	28
32	45.3	42.9	36.9	35.3	29.0	27.8	51.0	45.2	-	-	-	32
36	42.1	40.1	34.9	33.3	27.5	26.4	49.3	44.1	-	-	-	36
40	39.1	37.4	33.0	31.5	26.0	24.9	47.5	43.0	37.4	-	-	40
48	34.7	33.2	29.1	28.1	23.5	22.7	42.8	40.5	34.3	33.2	-	48
56	30.8	29.6	26.2	25.4	22.0	21.4	37.4	36.7	31.6	31.4	25.1	56
64	27.2	26.2	24.1	23.5	-	-	32.3	32.2	29.5	29.3	23.8	64
72	-	-	-	-	-	-	27.0	27.0	27.4	27.4	22.5	72
80	-	-	-	-	-	-	23.0	23.0	24.1	24.1	21.4	80
88	-	-	-	-	-	-	20.1	20.1	20.7	20.7	20.3	88
96	-	-	-	-	-	-	17.8	17.8	17.7	17.7	18.1	96
104	-	-	-	-	-	-	15.3	15.3	15.1	15.1	15.7	104
112	-	-	-	-	-	-	13.3	13.3	13.8	13.8	13.6	112
120	-	-	-	-	-	-	11.5	11.5	12.1	12.1	12.4	120
128	-	-	-	-	-	-	10.7	10.7	10.5	10.5	9.8	128
136	-	-	-	-	-	-	9.9	9.9	9.7	9.2	-	136
144	-	-	-	-	-	-	8.9	8.9	8.6	8.6	-	144

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
56	25.1	21.4	-	-	-	-	20.6	17.0	-	-	-	56
64	23.3	21.4	-	-	-	-	19.8	17.0	-	-	-	64
72	21.0	20.3	19.9	19.9	-	-	18.3	17.0	17.9	-	-	72
80	18.7	18.6	18.0	18.0	17.4	17.4	16.5	15.7	16.3	15.9	15.7	80
88	16.7	16.6	16.4	16.4	16.1	16.1	14.6	14.4	14.7	14.5	14.3	88
96	14.7	14.7	15.0	14.8	14.7	14.7	12.8	12.8	13.1	13.1	13.1	96
104	13.0	13.0	13.4	13.4	13.4	13.4	11.2	11.2	11.6	11.6	11.9	104
112	11.6	11.6	12.0	12.0	12.3	12.0	9.8	9.8	10.3	10.3	10.5	112
120	10.0	10.0	10.7	10.5	10.8	10.8	8.6	8.6	9.0	9.0	9.2	120
128	8.4	8.4	9.3	9.3	9.6	9.6	7.5	7.5	7.9	7.9	8.2	128
136	7.0	7.0	7.6	7.6	8.2	8.2	6.4	6.4	6.9	6.9	7.1	136
144	6.2	6.2	6.4	6.4	6.7	6.7	5.3	5.3	6.0	6.0	6.2	144
152	5.1	5.1	5.6	5.6	5.7	5.7	4.3	4.3	4.9	4.9	5.3	152
160	4.2	4.2	4.7	4.7	5.0	5.0	3.2	3.2	3.9	3.9	4.1	160
168	3.3	3.3	3.7	3.7	3.9	3.9	-	-	-	-	-	168
176	2.5	2.5	2.8	2.8	3.0	3.0	-	-	-	-	-	176










Operation






99,200 lb + 33,100 lb		55.8 ft		15.6 ft		32.2 ft/s		360°		ASME B30.5		
		42.3 ft				126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
14		49.3	-	-	-	-	-	-	-	-	-	14
16		47.3	41.7	-	-	-	-	-	-	-	-	16
18		45.5	40.4	-	-	-	-	-	-	-	-	18
20		43.6	39.0	-	-	-	-	-	-	-	-	20
24		40.0	36.3	-	-	-	-	-	-	-	-	24
28		36.8	33.8	-	-	-	-	-	-	-	-	28
32		34.1	31.5	26.4	-	-	-	-	-	-	-	32
36		31.7	29.5	24.8	23.6	-	-	33.9	28.3	-	-	36
40		29.5	27.5	23.4	22.3	-	-	32.9	27.7	-	-	40
48		25.8	24.4	21.0	20.1	16.1	15.5	30.8	26.3	-	-	48
56		22.9	21.7	18.9	17.9	14.6	14.1	28.9	25.0	22.1	20.7	56
64		20.3	19.2	16.9	16.2	13.4	13.0	27.1	23.8	20.8	19.5	64
72		18.1	17.2	15.5	14.8	12.6	12.1	25.4	22.5	19.6	18.3	72
80		16.3	15.7	14.2	13.8	-	-	23.3	21.2	18.3	17.3	80
88		-	-	-	-	-	-	20.3	19.6	17.3	16.5	88
96		-	-	-	-	-	-	17.6	17.3	16.3	15.7	96
104		-	-	-	-	-	-	15.3	15.2	15.3	14.9	104
112		-	-	-	-	-	-	13.2	13.1	14.0	14.0	112
120		-	-	-	-	-	-	12.2	11.6	12.4	12.4	120
128		-	-	-	-	-	-	10.8	10.7	10.8	10.8	128
136		-	-	-	-	-	-	9.5	9.5	9.4	9.4	136
144		-	-	-	-	-	-	8.2	8.2	8.8	8.8	144
152		-	-	-	-	-	-	7.4	7.1	7.6	7.6	152
160		-	-	-	-	-	-	6.8	6.5	6.5	6.5	160

		181.1 ft				196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
56		19.6	15.7	-	-	-	-	-	-	-	-	56
64		19.2	15.7	-	-	-	-	15.8	12.6	-	-	64
72		18.8	15.7	-	-	-	-	15.4	12.6	-	-	72
80		17.4	15.7	15.5	15.3	-	-	14.9	12.6	14.2	-	80
88		15.8	15.4	14.5	14.4	12.8	12.0	13.9	12.5	13.1	12.5	88
96		14.3	14.2	13.6	13.5	12.3	11.8	12.4	12.1	12.0	11.9	96
104		12.8	12.7	12.5	12.5	11.8	11.5	11.0	11.0	11.1	10.9	104
112		11.4	11.4	11.6	11.4	11.2	11.0	9.6	9.6	10.1	10.1	112
120		10.3	10.1	10.5	10.5	10.4	10.4	8.6	8.6	9.0	9.0	120
128		8.9	8.9	9.5	9.5	9.6	9.6	7.5	7.5	8.0	7.9	128
136		7.6	7.6	8.4	8.4	8.8	8.6	6.6	6.4	7.1	7.0	136
144		6.2	6.2	7.3	7.3	7.8	7.8	5.6	5.5	6.2	6.2	144
152		5.2	5.2	6.2	6.2	6.9	6.9	4.7	4.7	5.4	5.4	152
160		4.7	4.7	5.0	5.0	5.7	5.7	3.9	3.9	4.6	4.6	160
168		3.9	3.9	4.3	4.3	4.6	4.6	-	-	3.8	3.8	168
176		3.0	3.0	3.6	3.6	3.8	3.8	-	-	3.0	3.0	176
184		-	-	3.0	3.0	3.2	3.2	-	-	-	-	184

Operation

HAV

99,200 lb +  33,100 lb		 75.5 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
18		32.9	-	-	-	-	-	-	-	-	-	18
20		32.1	26.6	-	-	-	-	-	-	-	-	20
24		30.4	25.4	-	-	-	-	-	-	-	-	24
28		28.7	24.2	-	-	-	-	-	-	-	-	28
32		26.8	23.0	-	-	-	-	-	-	-	-	32
36		25.2	21.7	-	-	-	-	-	-	-	-	36
40		23.6	20.6	19.0	-	-	-	22.2	19.8	-	-	40
48		20.9	18.5	16.7	15.6	-	-	21.2	19.0	-	-	48
56		18.5	16.7	14.8	14.0	-	-	20.3	18.2	-	-	56
64		16.3	15.1	13.3	12.6	10.1	9.9	19.2	17.4	15.0	-	64
72		14.6	13.5	11.9	11.5	9.3	9.1	18.1	16.6	14.1	13.0	72
80		13.0	12.2	10.9	10.5	8.7	8.3	17.0	15.7	13.3	12.3	80
88		11.8	11.1	10.1	9.6	8.1	7.8	16.0	14.8	12.5	11.7	88
96		10.8	10.2	9.3	9.0	7.7	7.4	15.1	13.9	11.7	11.0	96
104		10.0	9.4	8.7	8.4	-	-	14.2	13.3	11.1	10.4	104
112		-	-	-	-	-	-	13.3	12.5	10.6	10.1	112
120		-	-	-	-	-	-	11.7	11.6	10.1	9.6	120
128		-	-	-	-	-	-	10.2	10.2	9.7	9.1	128
136		-	-	-	-	-	-	8.9	8.9	9.3	8.9	136
144		-	-	-	-	-	-	8.0	8.0	8.6	8.4	144
152		-	-	-	-	-	-	7.4	7.4	7.5	7.5	152
160		-	-	-	-	-	-	6.4	6.4	6.5	6.5	160
168		-	-	-	-	-	-	5.5	5.5	6.0	6.0	168
176		-	-	-	-	-	-	4.7	4.7	5.2	5.2	176
184		-	-	-	-	-	-	4.5	4.5	-	-	184

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
64		14.4	11.2	-	-	-	-	-	-	-	-	64
72		14.1	11.2	-	-	-	-	11.7	8.8	-	-	72
80		13.8	11.2	-	-	-	-	11.4	8.8	-	-	80
88		13.5	11.2	11.5	10.6	-	-	11.2	8.8	-	-	88
96		12.8	11.2	11.0	10.2	-	-	10.9	8.8	10.3	-	96
104		11.8	11.2	10.4	9.8	8.2	-	10.2	8.8	9.6	8.8	104
112		10.7	10.5	9.9	9.5	7.9	7.5	9.2	8.8	9.0	8.8	112
120		9.7	9.7	9.4	9.1	7.7	7.2	8.2	8.1	8.3	8.3	120
128		8.8	8.7	8.7	8.6	7.5	7.1	7.3	7.2	7.6	7.6	128
136		7.6	7.6	8.1	8.1	7.3	6.9	6.4	6.2	6.8	6.8	136
144		6.4	6.4	7.3	7.3	7.1	6.8	5.5	5.3	6.0	6.0	144
152		5.4	5.4	6.5	6.5	6.7	6.4	4.5	4.5	5.4	5.4	152
160		4.3	4.3	5.6	5.6	6.0	6.0	3.7	3.7	4.6	4.6	160
168		3.7	3.7	4.6	4.6	5.3	5.3	-	-	3.9	3.9	168
176		3.2	3.2	3.7	3.7	4.3	4.3	-	-	3.2	3.2	176
184		-	-	3.0	3.0	3.4	3.4	-	-	-	-	184

Operation

77,200 lb + 33,100 lb		16.4 ft		15.6 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
ft	0,3°		1°		0,3°		1°		0,3°		1°		
	0°		18°		36°		0°		18°		36°		
1,000 lb													
10	119.2	111.6	89.3	-	-	-	-	-	-	-	-	10	
12	113.1	106.0	86.0	82.2	-	-	-	-	-	-	-	12	
14	107.3	101.1	83.0	79.5	-	-	-	-	-	-	-	14	
16	102.0	96.4	80.3	77.0	67.3	64.9	-	-	-	-	-	16	
18	97.4	92.4	77.9	74.8	65.7	63.6	-	-	-	-	-	18	
20	93.1	88.6	75.5	72.7	64.1	62.4	-	-	-	-	-	20	
24	85.9	82.2	71.6	69.3	60.5	59.4	-	-	-	-	-	24	
28	79.8	76.7	67.8	65.9	57.5	56.6	75.2	68.1	-	-	-	28	
32	74.6	71.9	63.6	62.4	54.9	54.2	67.2	66.1	62.9	-	-	32	
36	67.1	65.7	59.7	58.8	53.3	52.6	61.1	59.8	58.8	58.6	51.1	36	
40	59.0	59.0	55.7	55.1	-	-	55.2	52.9	54.5	54.3	49.0	49.0	40
48	-	-	-	-	-	-	42.9	42.6	43.7	43.6	43.3	43.3	48
56	-	-	-	-	-	-	34.7	34.7	34.4	34.4	35.0	35.0	56
64	-	-	-	-	-	-	27.9	27.9	28.8	28.8	28.7	28.7	64
72	-	-	-	-	-	-	23.2	23.2	23.5	23.5	23.9	23.9	72
80	-	-	-	-	-	-	20.4	20.4	20.3	20.2	20.3	20.3	80
88	-	-	-	-	-	-	17.4	17.4	17.8	17.8	18.1	18.1	88
96	-	-	-	-	-	-	14.8	14.8	15.3	15.3	15.4	15.4	96
104	-	-	-	-	-	-	12.8	12.8	13.1	13.1	13.2	13.2	104
112	-	-	-	-	-	-	11.2	11.2	11.2	11.2	-	-	112
120	-	-	-	-	-	-	10.0	10.0	10.0	10.0	-	-	120
128	-	-	-	-	-	-	8.8	8.8	-	-	-	-	128

		181.1 ft				196.9 ft							
ft	0,3°		1°		0,3°		1°		0,3°		1°		
	0°		18°		36°		0°		18°		36°		
1,000 lb													
48	35.2	28.7	-	-	-	-	26.6	-	-	-	-	-	48
56	31.2	27.8	30.4	27.5	29.7	-	25.0	22.5	25.1	-	-	-	56
64	26.6	25.3	26.9	25.0	26.6	24.6	22.4	21.3	22.2	21.4	22.1	21.4	64
72	21.7	21.7	22.4	22.1	23.0	22.1	19.7	19.2	19.7	19.4	19.5	19.4	72
80	18.1	17.8	18.5	18.5	18.9	18.9	17.2	17.0	17.3	17.3	17.5	17.3	80
88	15.4	14.8	15.3	15.3	15.8	15.8	14.5	14.5	15.1	15.1	15.4	15.4	88
96	12.9	12.8	13.1	13.1	13.3	13.3	12.0	12.0	12.6	12.6	12.9	12.9	96
104	10.8	10.8	11.3	11.3	11.5	11.5	9.7	9.7	10.2	10.2	10.6	10.6	104
112	8.7	8.7	9.2	9.2	9.6	9.6	7.8	7.8	8.3	8.3	8.7	8.7	112
120	7.1	7.1	7.6	7.6	7.8	7.8	6.0	6.0	6.5	6.5	6.9	6.9	120
128	5.6	5.6	6.1	6.1	6.3	6.3	4.5	4.5	5.0	5.0	5.3	5.3	128
136	4.4	4.4	4.7	4.7	4.9	4.9	3.3	3.3	3.6	3.6	4.0	4.0	136
144	3.4	3.4	3.6	3.6	3.6	3.6	-	-	2.5	2.5	2.7	2.7	144

Operation

HAV

77,200 lb + 33,100 lb		36.1 ft		15.6 ft		32.2 ft/s		360°		ASME B30.5	
		42.3 ft				126.0 ft					
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft
	0°		18°		36°		0°		18°		
1,000 lb											
10	77.9	69.2	-	-	-	-	-	-	-	-	10
12	73.4	66.0	-	-	-	-	-	-	-	-	12
14	69.3	62.9	-	-	-	-	-	-	-	-	14
16	65.6	59.9	-	-	-	-	-	-	-	-	16
18	62.2	57.2	-	-	-	-	-	-	-	-	18
20	59.1	54.5	44.9	-	-	-	-	-	-	-	20
24	53.6	50.1	41.9	39.7	-	-	-	-	-	-	24
28	49.2	46.2	39.3	37.4	-	-	-	-	-	-	28
32	45.3	42.9	36.9	35.3	29.0	27.8	51.0	45.2	-	-	32
36	42.1	40.1	34.9	33.3	27.5	26.4	49.3	44.1	-	-	36
40	39.1	37.4	33.0	31.5	26.0	24.9	47.5	43.0	37.4	-	40
48	34.7	33.2	29.1	28.1	23.5	22.7	42.1	40.0	34.3	33.2	48
56	30.8	29.6	26.2	25.4	22.0	21.4	34.3	34.2	31.6	31.4	56
64	27.2	26.2	24.1	23.5	-	-	27.9	27.9	28.8	28.8	64
72	-	-	-	-	-	-	23.9	23.9	24.4	24.4	72
80	-	-	-	-	-	-	20.0	20.0	20.2	20.2	80
88	-	-	-	-	-	-	17.0	17.0	17.6	17.6	88
96	-	-	-	-	-	-	15.0	15.0	15.1	15.1	96
104	-	-	-	-	-	-	13.4	13.4	13.4	12.8	104
112	-	-	-	-	-	-	11.6	11.6	11.6	11.6	112
120	-	-	-	-	-	-	10.0	10.0	10.5	10.5	120
128	-	-	-	-	-	-	8.8	8.8	9.1	9.1	128
136	-	-	-	-	-	-	7.7	7.7	8.0	8.0	136
144	-	-	-	-	-	-	6.9	6.9	6.7	6.7	144

		181.1 ft				196.9 ft						
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft	
	0°		18°		36°		0°		18°			36°
1,000 lb												
56	25.1	21.4	-	-	-	-	20.6	17.0	-	-	-	56
64	23.3	21.4	-	-	-	-	19.8	17.0	-	-	-	64
72	21.0	20.3	19.9	19.9	-	-	18.3	17.0	17.9	-	-	72
80	18.5	18.3	18.0	18.0	17.4	17.4	16.5	15.7	16.3	15.9	15.7	80
88	15.4	15.4	16.3	16.3	16.1	16.1	14.6	14.4	14.7	14.5	14.3	88
96	12.9	12.9	14.0	14.0	14.6	14.6	12.4	12.4	13.1	13.1	13.1	96
104	11.0	11.0	11.7	11.7	12.4	12.4	10.2	10.2	11.4	11.4	11.9	104
112	9.4	9.4	10.1	10.1	10.5	10.5	8.3	8.3	9.6	9.6	10.5	112
120	7.8	7.8	8.7	8.7	9.0	9.0	6.7	6.7	7.8	7.8	8.6	120
128	6.3	6.3	7.0	7.0	7.7	7.7	5.2	5.2	6.2	6.2	6.8	128
136	4.9	4.9	5.8	5.8	6.3	6.3	4.0	4.0	4.7	4.7	5.4	136
144	3.8	3.8	4.5	4.5	4.9	4.9	2.9	2.9	3.6	3.6	4.0	144
152	2.8	2.8	3.4	3.4	3.8	3.8	-	-	-	-	2.9	152
160	-	-	-	-	2.7	2.7	-	-	-	-	-	160










Operation






77,200 lb + 33,100 lb		55.8 ft		15.6 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
													0°
1,000 lb													
14	49.3	-	-	-	-	-	-	-	-	-	-	14	
16	47.3	41.7	-	-	-	-	-	-	-	-	-	16	
18	45.5	40.4	-	-	-	-	-	-	-	-	-	18	
20	43.6	39.0	-	-	-	-	-	-	-	-	-	20	
24	40.0	36.3	-	-	-	-	-	-	-	-	-	24	
28	36.8	33.8	-	-	-	-	-	-	-	-	-	28	
32	34.1	31.5	26.4	-	-	-	-	-	-	-	-	32	
36	31.7	29.5	24.8	23.6	-	-	33.9	28.3	-	-	-	36	
40	29.5	27.5	23.4	22.3	-	-	32.9	27.7	-	-	-	40	
48	25.8	24.4	21.0	20.1	16.1	15.5	30.8	26.3	-	-	-	48	
56	22.9	21.7	18.9	17.9	14.6	14.1	28.9	25.0	22.1	20.7	-	56	
64	20.3	19.2	16.9	16.2	13.4	13.0	27.1	23.8	20.8	19.5	-	64	
72	18.1	17.2	15.5	14.8	12.6	12.1	23.7	22.5	19.6	18.3	14.3	13.7	72
80	16.3	15.7	14.2	13.8	-	-	20.0	20.0	18.3	17.3	13.8	13.1	80
88	-	-	-	-	-	-	17.2	16.7	17.3	16.5	13.3	12.6	88
96	-	-	-	-	-	-	15.1	14.4	15.6	15.4	12.7	12.2	96
104	-	-	-	-	-	-	13.0	13.0	13.3	13.3	12.4	11.9	104
112	-	-	-	-	-	-	11.6	11.2	11.6	11.6	11.8	11.4	112
120	-	-	-	-	-	-	10.3	9.9	10.4	10.4	10.5	10.4	120
128	-	-	-	-	-	-	8.9	8.8	9.1	9.1	9.5	9.5	128
136	-	-	-	-	-	-	8.1	8.1	8.1	8.1	8.3	8.3	136
144	-	-	-	-	-	-	7.1	7.1	7.3	7.3	7.5	7.5	144
152	-	-	-	-	-	-	6.1	6.1	6.5	6.5	-	-	152
160	-	-	-	-	-	-	5.3	5.3	5.6	5.6	-	-	160

		181.1 ft				196.9 ft							
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
													0°
1,000 lb													
56	19.6	15.7	-	-	-	-	-	-	-	-	-	56	
64	19.2	15.7	-	-	-	-	15.8	12.6	-	-	-	64	
72	18.8	15.7	-	-	-	-	15.4	12.6	-	-	-	72	
80	17.4	15.7	15.5	15.3	-	-	14.9	12.6	14.2	-	-	80	
88	15.6	15.1	14.5	14.4	12.8	12.0	13.9	12.5	13.1	12.5	-	88	
96	13.3	13.2	13.6	13.5	12.3	11.8	12.3	11.9	12.0	11.9	11.2	11.2	96
104	11.1	11.1	12.5	12.5	11.8	11.5	10.2	10.2	11.1	10.9	10.6	10.6	104
112	9.4	9.4	10.9	10.9	11.2	11.0	8.5	8.5	10.1	10.1	9.9	9.9	112
120	8.3	8.3	9.3	9.3	10.3	10.3	7.0	7.0	8.7	8.7	9.1	9.1	120
128	6.9	6.9	7.8	7.7	8.8	8.8	5.6	5.6	7.2	7.2	8.3	8.3	128
136	5.8	5.8	6.9	6.8	7.2	7.2	4.4	4.4	5.8	5.8	7.1	7.1	136
144	4.5	4.5	5.6	5.6	6.4	6.4	3.4	3.4	4.7	4.7	5.8	5.8	144
152	3.6	3.6	4.5	4.5	5.1	5.1	-	-	3.6	3.6	4.5	4.5	152
160	-	-	3.5	3.5	4.1	4.1	-	-	-	-	3.4	3.4	160

Operation










HAV






77,200 lb +  33,100 lb		 75.5 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
18		32.9	-	-	-	-	-	-	-	-	-	18
20		32.1	26.6	-	-	-	-	-	-	-	-	20
24		30.4	25.4	-	-	-	-	-	-	-	-	24
28		28.7	24.2	-	-	-	-	-	-	-	-	28
32		26.8	23.0	-	-	-	-	-	-	-	-	32
36		25.2	21.7	-	-	-	-	-	-	-	-	36
40		23.6	20.6	19.0	-	-	-	22.2	19.8	-	-	40
48		20.9	18.5	16.7	15.6	-	-	21.2	19.0	-	-	48
56		18.5	16.7	14.8	14.0	-	-	20.3	18.2	-	-	56
64		16.3	15.1	13.3	12.6	10.1	9.9	19.2	17.4	15.0	-	64
72		14.6	13.5	11.9	11.5	9.3	9.1	18.1	16.6	14.1	13.0	72
80		13.0	12.2	10.9	10.5	8.7	8.3	17.0	15.7	13.3	12.3	80
88		11.8	11.1	10.1	9.6	8.1	7.8	16.0	14.8	12.5	11.7	88
96		10.8	10.2	9.3	9.0	7.7	7.4	14.5	13.9	11.7	11.0	96
104		10.0	9.4	8.7	8.4	-	-	12.4	12.4	11.1	10.4	104
112		-	-	-	-	-	-	11.0	10.9	10.6	10.1	112
120		-	-	-	-	-	-	9.8	9.7	10.0	9.6	120
128		-	-	-	-	-	-	8.5	8.5	9.0	8.8	128
136		-	-	-	-	-	-	7.5	7.5	8.1	8.1	136
144		-	-	-	-	-	-	6.6	6.6	7.1	7.1	144
152		-	-	-	-	-	-	6.1	6.1	6.3	6.3	152
160		-	-	-	-	-	-	5.3	5.3	5.5	5.5	160
168		-	-	-	-	-	-	4.5	4.5	5.0	5.0	168
176		-	-	-	-	-	-	3.8	3.8	4.3	4.3	176
184		-	-	-	-	-	-	3.3	3.3	-	-	184

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
64		14.4	11.2	-	-	-	-	-	-	-	-	64
72		14.1	11.2	-	-	-	-	11.7	8.8	-	-	72
80		13.8	11.2	-	-	-	-	11.4	8.8	-	-	80
88		13.5	11.2	11.5	10.6	-	-	11.2	8.8	-	-	88
96		12.4	11.2	11.0	10.2	-	-	10.9	8.8	10.3	-	96
104		10.4	10.3	10.4	9.8	8.2	-	9.5	8.8	9.6	8.8	104
112		8.8	8.8	9.9	9.5	7.9	7.5	7.8	7.8	9.0	8.8	112
120		7.8	7.7	9.2	9.0	7.7	7.2	6.3	6.3	8.2	8.2	120
128		6.5	6.5	7.8	7.8	7.5	7.1	5.1	5.1	7.2	7.2	128
136		5.3	5.3	6.6	6.6	7.3	6.9	4.0	4.0	5.8	5.8	136
144		4.2	4.2	5.8	5.8	6.9	6.8	2.9	2.9	4.7	4.7	144
152		3.4	3.4	4.9	4.9	5.6	5.6	-	-	3.6	3.6	152
160		2.6	2.6	3.9	3.9	4.8	4.8	-	-	2.8	2.8	160
168		-	-	-	-	3.9	3.9	-	-	-	-	168
176		-	-	-	-	3.0	3.0	-	-	-	-	176

Operation

HAV

55,100 lb +  33,100 lb		 16.4 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
10	119.2	111.6	89.3	-	-	-	-	-	-	-	-	10	
12	113.1	106.0	86.0	82.2	-	-	-	-	-	-	-	12	
14	107.3	101.1	83.0	79.5	-	-	-	-	-	-	-	14	
16	102.0	96.4	80.3	77.0	67.3	64.9	-	-	-	-	-	16	
18	97.4	92.4	77.9	74.8	65.7	63.6	-	-	-	-	-	18	
20	93.1	88.6	75.5	72.7	64.1	62.4	-	-	-	-	-	20	
24	85.9	82.2	71.6	69.3	60.5	59.4	-	-	-	-	-	24	
28	79.8	76.7	67.8	65.9	57.5	56.6	72.3	64.3	-	-	-	28	
32	69.3	68.6	63.6	62.4	54.9	54.2	62.1	56.3	62.9	-	-	32	
36	58.6	58.6	57.1	56.6	53.2	52.6	54.5	50.3	55.9	51.5	51.1	36	
40	49.2	49.2	50.1	50.1	-	-	48.2	45.5	48.8	45.3	48.4	47.0	40
48	-	-	-	-	-	-	36.4	36.1	36.5	36.5	37.4	37.1	48
56	-	-	-	-	-	-	29.0	29.0	29.3	29.3	29.9	29.9	56
64	-	-	-	-	-	-	24.0	24.0	24.4	24.4	24.5	24.4	64
72	-	-	-	-	-	-	19.9	19.9	20.2	20.2	20.6	20.6	72
80	-	-	-	-	-	-	16.7	16.7	17.2	17.2	17.2	17.2	80
88	-	-	-	-	-	-	14.0	14.0	14.4	14.4	14.6	14.6	88
96	-	-	-	-	-	-	11.8	11.8	12.1	12.1	12.3	12.3	96
104	-	-	-	-	-	-	9.9	9.9	10.3	10.3	10.4	10.4	104
112	-	-	-	-	-	-	8.5	8.5	8.7	8.7	-	-	112
120	-	-	-	-	-	-	7.0	7.0	7.2	7.2	-	-	120
128	-	-	-	-	-	-	5.9	5.9	-	-	-	-	128

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
48	33.0	28.0	-	-	-	-	26.6	-	-	-	-	48	
56	26.8	24.6	27.6	25.8	28.5	24.2	24.5	22.2	25.1	-	-	56	
64	22.0	21.0	22.0	21.7	22.7	22.0	20.3	19.3	21.4	20.1	21.9	20.9	64
72	17.5	17.5	18.4	18.4	18.8	18.8	16.4	15.7	17.3	16.6	18.2	17.3	72
80	14.3	14.3	15.0	15.0	15.4	15.4	13.2	12.8	14.0	13.7	14.5	14.3	80
88	11.5	11.5	12.2	12.2	12.5	12.5	10.3	10.3	11.1	11.1	11.8	11.8	88
96	9.2	9.2	9.8	9.8	10.1	10.1	8.1	8.1	8.8	8.8	9.3	9.3	96
104	7.1	7.1	7.7	7.7	8.0	8.0	6.2	6.2	6.7	6.7	7.1	7.1	104
112	5.4	5.4	5.9	5.9	6.3	6.3	4.3	4.3	5.0	5.0	5.2	5.2	112
120	3.9	3.9	4.3	4.3	4.7	4.7	-	-	3.4	3.4	3.7	3.7	120
128	2.7	2.7	3.1	3.1	3.3	3.3	-	-	-	-	-	-	128










Operation






HAV

55,100 lb +		33,100 lb		36.1 ft		15.6 ft		32.2 ft/s		360°		ASME B30.5		
		42.3 ft				126.0 ft								
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°
1,000 lb														
10	77.9	69.2	-	-	-	-	-	-	-	-	-	-	-	-
12	73.4	66.0	-	-	-	-	-	-	-	-	-	-	-	-
14	69.3	62.9	-	-	-	-	-	-	-	-	-	-	-	-
16	65.6	59.9	-	-	-	-	-	-	-	-	-	-	-	-
18	62.2	57.2	-	-	-	-	-	-	-	-	-	-	-	-
20	59.1	54.5	44.9	-	-	-	-	-	-	-	-	-	-	-
24	53.6	50.1	41.9	39.7	-	-	-	-	-	-	-	-	-	-
28	49.2	46.2	39.3	37.4	-	-	-	-	-	-	-	-	-	-
32	45.3	42.9	36.9	35.3	29.0	27.8	51.0	45.2	-	-	-	-	-	-
36	42.1	40.1	34.9	33.3	27.5	26.4	49.2	44.0	-	-	-	-	-	-
40	39.1	37.4	33.0	31.5	26.0	24.9	46.7	42.3	37.4	-	-	-	-	-
48	34.7	33.2	29.1	28.1	23.5	22.7	36.4	35.3	34.3	33.2	-	-	-	-
56	30.8	29.6	26.2	25.4	22.0	21.4	29.2	29.1	29.9	29.6	25.1	24.4	-	-
64	26.0	25.7	24.1	23.5	-	-	23.9	23.9	24.8	24.8	23.8	23.4	-	-
72	-	-	-	-	-	-	20.1	20.1	20.6	20.4	21.2	21.0	-	-
80	-	-	-	-	-	-	17.0	17.0	17.4	17.0	17.8	17.8	-	-
88	-	-	-	-	-	-	14.5	14.5	14.7	14.6	15.1	15.1	-	-
96	-	-	-	-	-	-	12.5	12.5	12.8	12.8	13.1	13.1	-	-
104	-	-	-	-	-	-	10.6	10.6	10.9	10.9	11.3	11.3	-	-
112	-	-	-	-	-	-	9.0	9.0	9.6	9.6	9.8	9.8	-	-
120	-	-	-	-	-	-	7.6	7.6	8.2	8.2	8.5	8.5	-	-
128	-	-	-	-	-	-	6.4	6.4	6.8	6.8	4.1	4.1	-	-
136	-	-	-	-	-	-	5.3	5.3	5.6	5.6	-	-	-	-
144	-	-	-	-	-	-	4.4	4.4	4.7	4.7	-	-	-	-

		181.1 ft				196.9 ft								
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°
1,000 lb														
56	25.0	21.4	-	-	-	-	20.6	17.0	-	-	-	-	-	-
64	21.4	19.6	19.3	-	-	-	19.8	17.0	-	-	-	-	-	-
72	18.1	17.2	19.2	18.2	-	-	16.4	15.5	17.9	-	-	-	-	-
80	14.7	14.4	15.8	15.6	16.9	16.6	13.0	12.8	14.9	14.6	15.6	15.5	-	-
88	11.9	11.9	13.4	13.4	13.9	13.9	10.2	10.2	12.0	12.0	13.6	13.3	-	-
96	9.6	9.6	11.0	11.0	11.9	11.9	8.1	8.1	9.6	9.6	10.9	10.9	-	-
104	7.7	7.7	8.9	8.9	9.9	9.9	6.2	6.2	7.5	7.5	8.6	8.6	-	-
112	6.1	6.1	7.2	7.2	8.1	8.1	4.6	4.6	5.9	5.9	7.0	7.0	-	-
120	4.6	4.6	5.6	5.6	6.2	6.2	3.3	3.3	4.3	4.3	5.4	5.4	-	-
128	3.4	3.4	4.2	4.2	4.7	4.7	-	-	3.1	3.1	4.1	4.1	-	-
136	-	-	2.9	2.9	3.5	3.5	-	-	-	-	2.7	2.7	-	-
144	-	-	-	-	2.5	2.5	-	-	-	-	-	-	-	-










Operation






55,100 lb +  33,100 lb		 55.8 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5				
		 42.3 ft				 126.0 ft								
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		36°		
ft		1,000 lb												ft
14		49.3	-	-	-	-	-	-	-	-	-	-	-	14
16		47.3	41.7	-	-	-	-	-	-	-	-	-	-	16
18		45.5	40.4	-	-	-	-	-	-	-	-	-	-	18
20		43.6	39.0	-	-	-	-	-	-	-	-	-	-	20
24		40.0	36.3	-	-	-	-	-	-	-	-	-	-	24
28		36.8	33.8	-	-	-	-	-	-	-	-	-	-	28
32		34.1	31.5	26.4	-	-	-	-	-	-	-	-	-	32
36		31.7	29.5	24.8	23.6	-	-	33.9	28.3	-	-	-	-	36
40		29.5	27.5	23.4	22.3	-	-	32.9	27.7	-	-	-	-	40
48		25.8	24.4	21.0	20.1	16.1	15.5	30.8	26.3	-	-	-	-	48
56		22.9	21.7	18.9	17.9	14.6	14.1	28.2	25.0	22.1	20.7	-	-	56
64		20.3	19.2	16.9	16.2	13.4	13.0	24.2	22.8	20.8	19.5	-	-	64
72		18.1	17.2	15.5	14.8	12.6	12.1	19.9	19.9	19.6	18.3	14.3	13.7	72
80		16.3	15.7	14.2	13.8	-	-	17.2	16.5	17.7	17.0	13.8	13.1	80
88		-	-	-	-	-	-	14.4	14.4	15.4	15.4	13.3	12.6	88
96		-	-	-	-	-	-	12.5	12.5	13.0	13.0	12.7	12.2	96
104		-	-	-	-	-	-	10.8	10.8	11.4	11.4	11.8	11.8	104
112		-	-	-	-	-	-	9.4	9.4	10.1	10.1	10.5	10.5	112
120		-	-	-	-	-	-	8.3	8.3	8.7	8.7	9.1	9.1	120
128		-	-	-	-	-	-	7.0	7.0	7.6	7.6	8.0	8.0	128
136		-	-	-	-	-	-	6.0	6.0	6.6	6.6	7.0	7.0	136
144		-	-	-	-	-	-	4.9	4.9	5.6	5.6	5.8	5.8	144
152		-	-	-	-	-	-	4.1	4.1	4.5	4.5	-	-	152
160		-	-	-	-	-	-	3.3	3.3	3.7	3.7	-	-	160

		 181.1 ft				 196.9 ft								
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		36°		
ft		1,000 lb												ft
56		19.6	15.7	-	-	-	-	-	-	-	-	-	-	56
64		19.2	15.7	-	-	-	-	15.8	12.6	-	-	-	-	64
72		17.0	15.7	-	-	-	-	15.4	12.6	-	-	-	-	72
80		14.6	13.9	15.4	15.2	-	-	12.8	12.3	14.2	-	-	-	80
88		12.0	12.0	13.6	13.5	12.8	12.0	10.2	10.2	12.6	12.1	-	-	88
96		9.7	9.7	11.5	11.5	12.3	11.8	8.1	8.1	10.4	10.4	11.2	11.2	96
104		7.7	7.7	9.7	9.7	10.8	10.7	6.2	6.2	8.4	8.4	10.1	10.1	104
112		6.3	6.3	7.9	7.9	9.6	9.6	4.8	4.8	6.5	6.5	8.3	8.3	112
120		4.8	4.8	6.5	6.5	7.8	7.8	3.5	3.5	5.2	5.2	6.7	6.7	120
128		3.7	3.7	5.2	5.2	6.5	6.5	-	-	3.9	3.9	5.3	5.3	128
136		2.7	2.7	4.0	4.0	5.2	5.2	-	-	2.8	2.8	4.0	4.0	136
144		-	-	3.1	3.1	3.8	3.8	-	-	-	-	2.9	2.9	144

Operation










HAV






55,100 lb +  33,100 lb		 75.5 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
18		32.9	-	-	-	-	-	-	-	-	-	18
20		32.1	26.6	-	-	-	-	-	-	-	-	20
24		30.4	25.4	-	-	-	-	-	-	-	-	24
28		28.7	24.2	-	-	-	-	-	-	-	-	28
32		26.8	23.0	-	-	-	-	-	-	-	-	32
36		25.2	21.7	-	-	-	-	-	-	-	-	36
40		23.6	20.6	19.0	-	-	-	22.2	19.8	-	-	40
48		20.9	18.5	16.7	15.6	-	-	21.2	19.0	-	-	48
56		18.5	16.7	14.8	14.0	-	-	20.3	18.2	-	-	56
64		16.3	15.1	13.3	12.6	10.1	9.9	19.2	17.4	15.0	-	64
72		14.6	13.5	11.9	11.5	9.3	9.1	18.1	16.6	14.1	13.0	72
80		13.0	12.2	10.9	10.5	8.7	8.3	16.6	15.5	13.3	12.3	80
88		11.8	11.1	10.1	9.6	8.1	7.8	14.2	14.0	12.5	11.7	88
96		10.8	10.2	9.3	9.0	7.7	7.4	12.3	12.3	11.7	11.0	96
104		10.0	9.4	8.7	8.4	-	-	10.6	10.6	11.1	10.4	104
112		-	-	-	-	-	-	9.2	9.2	9.9	9.8	112
120		-	-	-	-	-	-	8.1	8.1	8.9	8.9	120
128		-	-	-	-	-	-	6.9	6.9	7.6	7.6	128
136		-	-	-	-	-	-	6.0	6.0	6.8	6.8	136
144		-	-	-	-	-	-	5.1	5.1	5.8	5.8	144
152		-	-	-	-	-	-	4.1	4.1	5.0	5.0	152
160		-	-	-	-	-	-	3.4	3.4	4.2	4.2	160
168		-	-	-	-	-	-	-	-	3.3	3.3	168
176		-	-	-	-	-	-	-	-	2.5	2.5	176

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
64		14.4	11.2	-	-	-	-	-	-	-	-	64
72		14.1	11.2	-	-	-	-	11.7	8.8	-	-	72
80		13.0	11.2	-	-	-	-	11.2	8.8	-	-	80
88		11.1	10.4	11.5	10.6	-	-	9.4	8.6	-	-	88
96		8.9	8.9	10.8	10.2	-	-	7.4	7.4	10.0	-	96
104		7.3	7.3	9.4	9.3	8.2	-	5.7	5.7	8.4	8.3	104
112		5.7	5.7	7.9	7.9	7.9	7.5	4.1	4.1	6.5	6.5	112
120		4.4	4.4	6.5	6.5	7.6	7.2	2.8	2.8	5.2	5.2	120
128		3.3	3.3	5.2	5.2	6.8	6.7	-	-	4.0	4.0	128
136		-	-	4.0	4.0	5.8	5.8	-	-	2.9	2.9	136
144		-	-	3.1	3.1	4.5	4.5	-	-	-	-	144
152		-	-	-	-	3.6	3.6	-	-	-	-	152

Operation










HAV






33,100 lb +  33,100 lb		 16.4 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
10	119.2	111.6	89.3	-	-	-	-	-	-	-	-	10	
12	113.1	106.0	86.0	82.2	-	-	-	-	-	-	-	12	
14	107.3	101.1	83.0	79.5	-	-	-	-	-	-	-	14	
16	102.0	96.4	80.3	77.0	67.3	64.9	-	-	-	-	-	16	
18	97.4	92.4	77.9	74.8	65.7	63.6	-	-	-	-	-	18	
20	93.1	88.6	75.5	72.7	64.1	62.4	-	-	-	-	-	20	
24	84.6	82.0	71.6	69.3	60.5	59.4	-	-	-	-	-	24	
28	71.0	71.0	67.8	65.9	57.5	56.6	60.5	54.1	-	-	-	28	
32	56.9	56.9	58.3	57.9	54.9	54.2	51.9	47.7	52.4	46.7	-	32	
36	47.7	47.7	48.9	48.9	48.4	48.1	45.2	42.3	46.4	42.8	47.0	39.6	36
40	39.7	39.7	40.8	40.8	-	-	39.9	38.2	40.6	38.6	41.6	39.0	40
48	-	-	-	-	-	-	30.6	30.3	31.0	30.9	31.6	31.5	48
56	-	-	-	-	-	-	24.1	24.1	25.0	25.0	25.1	25.1	56
64	-	-	-	-	-	-	19.0	19.0	19.7	19.7	20.2	20.2	64
72	-	-	-	-	-	-	15.3	15.3	16.0	16.0	16.2	16.2	72
80	-	-	-	-	-	-	12.4	12.4	13.0	13.0	13.3	13.3	80
88	-	-	-	-	-	-	10.3	10.3	10.6	10.6	11.0	11.0	88
96	-	-	-	-	-	-	8.3	8.3	8.7	8.7	8.9	8.9	96
104	-	-	-	-	-	-	6.6	6.6	6.8	6.8	7.1	7.1	104
112	-	-	-	-	-	-	5.2	5.2	5.4	5.4	-	-	112
120	-	-	-	-	-	-	3.9	3.9	4.2	4.2	-	-	120
128	-	-	-	-	-	-	3.0	3.0	-	-	-	-	128

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
48	26.0	23.8	-	-	-	-	23.5	-	-	-	-	48	
56	20.4	19.1	21.5	20.2	22.5	21.1	18.2	17.2	19.4	-	-	56	
64	16.0	15.3	17.0	16.2	17.8	17.1	14.0	13.5	15.1	14.4	16.0	15.3	64
72	12.4	12.2	13.3	13.1	14.0	13.7	10.7	10.6	11.5	11.3	12.4	12.2	72
80	9.5	9.5	10.4	10.4	11.0	10.9	8.0	8.0	8.8	8.8	9.5	9.5	80
88	7.2	7.2	7.9	7.9	8.5	8.5	5.7	5.7	6.3	6.3	7.0	7.0	88
96	5.3	5.3	5.9	5.9	6.4	6.4	3.8	3.8	4.5	4.5	5.0	5.0	96
104	3.5	3.5	4.2	4.2	4.4	4.4	-	-	2.8	2.8	3.3	3.3	104

Operation










HAV






33,100 lb +  33,100 lb		 36.1 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
10		77.9	69.2	-	-	-	-	-	-	-	-	10
12		73.4	66.0	-	-	-	-	-	-	-	-	12
14		69.3	62.9	-	-	-	-	-	-	-	-	14
16		65.6	59.9	-	-	-	-	-	-	-	-	16
18		62.2	57.2	-	-	-	-	-	-	-	-	18
20		59.1	54.5	44.9	-	-	-	-	-	-	-	20
24		53.6	50.1	41.9	39.7	-	-	-	-	-	-	24
28		49.2	46.2	39.3	37.4	-	-	-	-	-	-	28
32		45.3	42.9	36.9	35.3	29.0	27.8	49.0	42.9	-	-	32
36		42.1	40.1	34.9	33.3	27.5	26.4	44.1	39.9	-	-	36
40		39.0	37.4	33.0	31.5	26.0	24.9	38.7	36.2	37.3	-	40
48		32.4	32.2	29.1	28.1	23.5	22.7	30.8	29.4	32.1	30.6	48
56		25.5	25.5	25.7	25.3	22.0	21.4	24.5	24.3	25.4	24.6	56
64		20.5	20.5	21.3	21.3	-	-	19.9	19.9	20.4	20.3	64
72		-	-	-	-	-	-	16.2	16.2	17.2	17.2	72
80		-	-	-	-	-	-	13.3	13.3	14.2	14.2	80
88		-	-	-	-	-	-	11.0	11.0	11.8	11.8	88
96		-	-	-	-	-	-	9.1	9.1	9.8	9.8	96
104		-	-	-	-	-	-	7.3	7.3	8.1	8.1	104
112		-	-	-	-	-	-	5.9	5.9	6.5	6.5	112
120		-	-	-	-	-	-	4.6	4.6	5.2	5.2	120
128		-	-	-	-	-	-	3.5	3.5	4.0	4.0	128
136		-	-	-	-	-	-	2.6	2.6	3.0	3.0	136

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
48		23.3	-	-	-	-	-	-	-	-	-	48
56		20.3	18.7	-	-	-	-	18.3	16.0	-	-	56
64		16.0	15.0	18.2	-	-	-	14.0	13.2	-	-	64
72		12.4	12.2	14.4	13.7	16.1	-	10.4	10.4	12.6	-	72
80		9.5	9.5	11.3	11.3	12.8	12.6	7.8	7.8	9.7	9.7	80
88		7.2	7.2	8.8	8.8	10.2	10.2	5.5	5.5	7.2	7.2	88
96		5.3	5.3	6.7	6.7	7.9	7.9	3.8	3.8	5.2	5.2	96
104		3.7	3.7	5.0	5.0	6.2	6.2	-	-	3.5	3.5	104
112		-	-	3.5	3.5	4.6	4.6	-	-	-	-	112
120		-	-	-	-	3.2	3.2	-	-	-	-	120

Operation










HAV






33,100 lb +  33,100 lb		 55.8 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
14		49.3	-	-	-	-	-	-	-	-	-	14
16		47.3	41.7	-	-	-	-	-	-	-	-	16
18		45.5	40.4	-	-	-	-	-	-	-	-	18
20		43.6	39.0	-	-	-	-	-	-	-	-	20
24		40.0	36.3	-	-	-	-	-	-	-	-	24
28		36.8	33.8	-	-	-	-	-	-	-	-	28
32		34.1	31.5	26.4	-	-	-	-	-	-	-	32
36		31.7	29.5	24.8	23.6	-	-	33.9	28.3	-	-	36
40		29.5	27.5	23.4	22.3	-	-	32.8	27.7	-	-	40
48		25.8	24.4	21.0	20.1	16.1	15.5	29.5	25.7	-	-	48
56		22.9	21.7	18.9	17.9	14.6	14.1	24.7	22.7	22.1	20.7	56
64		20.3	19.2	16.9	16.2	13.4	13.0	19.7	19.3	20.6	19.4	64
72		18.1	17.2	15.5	14.8	12.6	12.1	16.6	16.6	17.5	17.4	72
80		15.5	15.5	14.2	13.8	-	-	13.9	13.9	14.6	14.6	80
88		-	-	-	-	-	-	11.6	11.6	12.7	12.7	88
96		-	-	-	-	-	-	9.6	9.6	10.9	10.9	96
104		-	-	-	-	-	-	8.1	8.1	9.1	9.1	104
112		-	-	-	-	-	-	6.5	6.5	7.6	7.6	112
120		-	-	-	-	-	-	5.3	5.3	6.3	6.3	120
128		-	-	-	-	-	-	4.2	4.2	5.1	5.1	128
136		-	-	-	-	-	-	3.3	3.3	4.0	4.0	136
144		-	-	-	-	-	-	2.5	2.5	2.9	2.9	144

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
56		18.7	15.7	-	-	-	-	-	-	-	-	56
64		15.6	14.5	-	-	-	-	13.8	12.6	-	-	64
72		12.2	12.2	-	-	-	-	10.4	10.4	-	-	72
80		9.4	9.4	12.1	12.0	-	-	7.8	7.8	10.6	-	80
88		7.2	7.2	9.5	9.5	11.5	11.5	5.5	5.5	8.1	8.1	88
96		5.3	5.3	7.4	7.4	9.5	9.5	3.8	3.8	6.1	6.1	96
104		3.9	3.9	5.7	5.7	7.5	7.5	-	-	4.4	4.4	104
112		-	-	4.3	4.3	5.9	5.9	-	-	-	-	112
120		-	-	3.1	3.1	4.5	4.5	-	-	-	-	120
128		-	-	-	-	3.3	3.3	-	-	-	-	128

Operation










HAV






33,100 lb +  33,100 lb		 75.5 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
18		32.9	-	-	-	-	-	-	-	-	-	18
20		32.1	26.6	-	-	-	-	-	-	-	-	20
24		30.4	25.4	-	-	-	-	-	-	-	-	24
28		28.7	24.2	-	-	-	-	-	-	-	-	28
32		26.8	23.0	-	-	-	-	-	-	-	-	32
36		25.2	21.7	-	-	-	-	-	-	-	-	36
40		23.6	20.6	19.0	-	-	-	22.2	19.8	-	-	40
48		20.9	18.5	16.7	15.6	-	-	21.2	19.0	-	-	48
56		18.5	16.7	14.8	14.0	-	-	20.3	18.2	-	-	56
64		16.3	15.1	13.3	12.6	10.1	9.9	18.5	17.1	15.0	-	64
72		14.6	13.5	11.9	11.5	9.3	9.1	15.9	15.7	14.1	13.0	72
80		13.0	12.2	10.9	10.5	8.7	8.3	13.6	13.6	13.3	12.3	80
88		11.8	11.1	10.1	9.6	8.1	7.8	11.6	11.6	12.2	11.5	88
96		10.8	10.2	9.3	9.0	7.7	7.4	9.7	9.7	10.7	10.5	96
104		10.0	9.4	8.7	8.4	-	-	8.1	8.1	9.6	9.5	104
112		-	-	-	-	-	-	6.8	6.8	8.1	8.1	112
120		-	-	-	-	-	-	5.5	5.5	6.8	6.8	120
128		-	-	-	-	-	-	4.4	4.4	5.6	5.6	128
136		-	-	-	-	-	-	3.5	3.5	4.4	4.4	136
144		-	-	-	-	-	-	2.5	2.5	3.6	3.6	144
152		-	-	-	-	-	-	-	-	-	-	152

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
64		13.4	11.2	-	-	-	-	-	-	-	-	64
72		11.3	10.8	-	-	-	-	9.3	8.8	-	-	72
80		8.7	8.7	-	-	-	-	6.7	6.7	-	-	80
88		6.4	6.4	9.5	9.5	-	-	4.7	4.7	-	-	88
96		4.7	4.7	7.4	7.4	-	-	3.1	3.1	6.1	-	96
104		3.3	3.3	5.7	5.7	8.0	-	-	-	4.4	-	104
112		-	-	4.3	4.3	6.5	6.5	-	-	-	-	112
120		-	-	3.1	3.1	5.0	5.0	-	-	-	-	120
128		-	-	-	-	3.9	3.9	-	-	-	-	128
136		-	-	-	-	2.7	2.7	-	-	-	-	136

Operation










HAV






11,000 lb +  33,100 lb		 16.4 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5				
		 42.3 ft				 126.0 ft								
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		36°		
ft		1,000 lb												ft
10		119.2	111.6	89.3	-	-	-	-	-	-	-	-	-	10
12		113.1	106.0	86.0	82.2	-	-	-	-	-	-	-	-	12
14		107.3	101.1	83.0	79.5	-	-	-	-	-	-	-	-	14
16		102.0	96.4	80.3	77.0	67.3	64.9	-	-	-	-	-	-	16
18		97.4	92.4	77.9	74.8	65.7	63.6	-	-	-	-	-	-	18
20		92.2	88.0	75.5	72.7	64.1	62.4	-	-	-	-	-	-	20
24		72.5	72.5	69.8	68.1	60.5	59.4	-	-	-	-	-	-	24
28		55.5	55.5	57.6	57.6	55.9	55.5	49.1	44.5	-	-	-	-	28
32		44.1	44.1	45.8	45.8	46.9	46.9	42.7	38.4	42.8	37.1	-	-	32
36		36.7	36.7	38.0	38.0	38.9	38.9	37.2	33.6	37.7	35.2	38.6	33.8	36
40		30.4	30.4	31.2	31.2	-	-	31.9	29.2	33.2	30.8	34.1	31.8	40
48		-	-	-	-	-	-	23.5	22.9	24.5	24.0	25.3	24.9	48
56		-	-	-	-	-	-	17.7	17.7	18.6	18.6	19.1	19.1	56
64		-	-	-	-	-	-	13.7	13.7	14.3	14.3	14.9	14.9	64
72		-	-	-	-	-	-	10.6	10.6	11.1	11.1	11.5	11.5	72
80		-	-	-	-	-	-	8.3	8.3	8.7	8.7	9.1	9.1	80
88		-	-	-	-	-	-	6.2	6.2	6.6	6.6	6.9	6.9	88
96		-	-	-	-	-	-	4.5	4.5	4.9	4.9	5.1	5.1	96
104		-	-	-	-	-	-	3.0	3.0	3.3	3.3	3.5	3.5	104

		 181.1 ft				 196.9 ft								
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		36°		
ft		1,000 lb												ft
48		17.5	16.4	-	-	-	-	15.4	-	-	-	-	-	48
56		13.0	12.6	14.1	13.6	15.1	14.4	11.0	10.7	12.2	-	-	-	56
64		9.5	9.4	10.4	10.3	11.3	11.0	7.7	7.7	8.6	8.6	9.5	9.5	64
72		6.7	6.7	7.6	7.6	8.2	8.2	4.9	4.9	5.8	5.8	6.7	6.7	72
80		4.3	4.3	5.2	5.2	5.8	5.8	-	-	3.6	3.6	4.3	4.3	80
88		-	-	3.2	3.2	3.8	3.8	-	-	-	-	-	-	88

Operation










HAV






11,000 lb +  33,100 lb		 36.1 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
10		77.9	69.2	-	-	-	-	-	-	-	-	10
12		73.4	66.0	-	-	-	-	-	-	-	-	12
14		69.3	62.9	-	-	-	-	-	-	-	-	14
16		65.6	59.9	-	-	-	-	-	-	-	-	16
18		62.2	57.2	-	-	-	-	-	-	-	-	18
20		59.1	54.5	44.9	-	-	-	-	-	-	-	20
24		53.6	50.1	41.9	39.7	-	-	-	-	-	-	24
28		49.2	46.2	39.3	37.4	-	-	-	-	-	-	28
32		45.3	42.9	36.9	35.3	29.0	27.8	40.2	34.1	-	-	32
36		39.4	38.3	34.9	33.3	27.5	26.4	35.7	32.3	-	-	36
40		33.2	33.2	32.8	31.4	26.0	24.9	31.6	28.6	30.5	-	40
48		24.8	24.8	26.4	26.4	23.5	22.7	24.3	22.6	25.4	24.1	48
56		19.2	19.2	20.2	20.2	20.6	20.3	18.6	18.1	20.2	19.9	56
64		15.3	15.3	15.8	15.8	-	-	14.4	14.4	15.8	15.8	64
72		-	-	-	-	-	-	11.3	11.3	12.4	12.4	72
80		-	-	-	-	-	-	8.9	8.9	10.0	10.0	80
88		-	-	-	-	-	-	6.9	6.9	8.0	8.0	88
96		-	-	-	-	-	-	5.1	5.1	6.1	6.1	96
104		-	-	-	-	-	-	3.7	3.7	4.6	4.6	104
112		-	-	-	-	-	-	-	-	3.2	3.2	112

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
48		17.6	-	-	-	-	-	-	-	-	-	48
56		13.2	12.3	-	-	-	-	11.1	10.5	-	-	56
64		9.5	9.4	11.7	-	-	-	7.5	7.4	-	-	64
72		6.5	6.5	8.4	8.4	10.4	-	4.7	4.7	6.9	-	72
80		4.3	4.3	6.1	6.1	7.6	7.6	-	-	4.5	-	80
88		-	-	4.1	4.1	5.5	5.5	-	-	-	-	88
96		-	-	-	-	3.7	3.7	-	-	-	-	96

Operation














HAV


11,000 lb +  33,100 lb		 55.8 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
14	49.3	-	-	-	-	-	-	-	-	-	-	14
16	47.3	41.7	-	-	-	-	-	-	-	-	-	16
18	45.5	40.4	-	-	-	-	-	-	-	-	-	18
20	43.6	39.0	-	-	-	-	-	-	-	-	-	20
24	40.0	36.3	-	-	-	-	-	-	-	-	-	24
28	36.8	33.8	-	-	-	-	-	-	-	-	-	28
32	34.1	31.5	26.4	-	-	-	-	-	-	-	-	32
36	31.7	29.5	24.8	23.6	-	-	31.5	26.5	-	-	-	36
40	29.5	27.5	23.4	22.3	-	-	29.7	26.0	-	-	-	40
48	25.5	24.4	21.0	20.1	16.1	15.5	24.0	22.2	-	-	-	48
56	20.8	20.8	18.9	17.9	14.6	14.1	19.3	18.0	20.4	18.8	-	56
64	16.6	16.6	16.9	16.2	13.4	13.0	15.1	14.5	16.8	16.6	-	64
72	13.5	13.5	14.6	14.6	12.6	12.1	12.0	12.0	13.7	13.7	14.3	72
80	11.2	11.2	12.0	12.0	-	-	9.4	9.4	11.1	11.1	12.6	80
88	-	-	-	-	-	-	7.5	7.5	9.1	9.1	10.3	88
96	-	-	-	-	-	-	5.9	5.9	7.3	7.3	8.4	96
104	-	-	-	-	-	-	4.6	4.6	5.7	5.7	6.8	104
112	-	-	-	-	-	-	3.2	3.2	4.3	4.3	5.2	112
120	-	-	-	-	-	-	-	-	3.3	3.3	3.9	120
128	-	-	-	-	-	-	-	-	-	-	2.9	128

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
56	12.9	12.3	-	-	-	-	-	-	-	-	-	56
64	9.3	9.2	-	-	-	-	7.3	7.3	-	-	-	64
72	6.5	6.5	-	-	-	-	4.5	4.5	-	-	-	72
80	4.3	4.3	6.9	6.9	-	-	-	-	-	-	-	80
88	-	-	4.9	4.9	7.1	7.1	-	-	-	-	-	88
96	-	-	3.1	3.1	5.2	5.2	-	-	-	-	-	96
104	-	-	-	-	3.5	3.5	-	-	-	-	-	104










Operation






HAV

11,000 lb +  33,100 lb		 75.5 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5	
		 42.3 ft				 126.0 ft					
 ft	 0,3° 1°		 0,3° 1°		 0,3° 1°		 0,3° 1°		 0,3° 1°		 ft
	0°		18°		36°		0°		18°		
1,000 lb											
18	32.9	-	-	-	-	-	-	-	-	-	18
20	32.1	26.6	-	-	-	-	-	-	-	-	20
24	30.4	25.4	-	-	-	-	-	-	-	-	24
28	28.7	24.2	-	-	-	-	-	-	-	-	28
32	26.8	23.0	-	-	-	-	-	-	-	-	32
36	25.2	21.7	-	-	-	-	-	-	-	-	36
40	23.6	20.6	19.0	-	-	-	22.2	19.8	-	-	40
48	20.9	18.5	16.7	15.6	-	-	20.3	18.2	-	-	48
56	18.5	16.7	14.8	14.0	-	-	17.6	16.5	-	-	56
64	16.3	15.1	13.3	12.6	10.1	9.9	14.4	14.3	14.8	-	64
72	14.2	13.5	11.9	11.5	9.3	9.1	11.3	11.3	13.3	12.8	72
80	11.8	11.8	10.9	10.5	8.7	8.3	8.9	8.9	11.5	11.5	80
88	9.9	9.9	10.1	9.6	8.1	7.8	7.0	7.0	9.3	9.3	88
96	8.3	8.3	9.0	8.8	7.7	7.4	5.5	5.5	7.5	7.5	96
104	7.2	7.2	7.7	7.7	-	-	4.1	4.1	5.9	5.9	104
112	-	-	-	-	-	-	3.0	3.0	4.8	4.8	112
120	-	-	-	-	-	-	-	-	3.7	3.7	120
128	-	-	-	-	-	-	-	-	2.8	2.8	128
136	-	-	-	-	-	-	-	-	-	-	136

		 181.1 ft				 196.9 ft					
 ft	 0,3° 1°		 0,3° 1°		 0,3° 1°		 0,3° 1°		 0,3° 1°		 ft
	0°		18°		36°		0°		18°		
1,000 lb											
64	8.1	8.1	-	-	-	-	-	-	-	-	64
72	5.4	5.4	-	-	-	-	-	-	-	-	72
80	3.5	3.5	-	-	-	-	-	-	-	-	80










Operation






0 lb +  33,100 lb		 16.4 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
10		119.2	111.6	89.3	-	-	-	-	-	-	-	10
12		113.1	106.0	86.0	82.2	-	-	-	-	-	-	12
14		107.3	101.1	83.0	79.5	-	-	-	-	-	-	14
16		102.0	96.4	80.3	77.0	67.3	64.9	-	-	-	-	16
18		95.6	89.9	77.9	74.8	65.7	63.6	-	-	-	-	18
20		87.8	82.4	75.3	72.7	64.1	62.4	-	-	-	-	20
24		63.2	63.2	65.8	65.5	60.1	59.4	-	-	-	-	24
28		48.1	48.1	50.0	50.0	51.8	51.8	42.9	38.0	-	-	28
32		37.9	37.9	39.4	39.4	40.8	40.8	36.5	32.6	38.3	31.2	32
36		31.3	31.3	32.4	32.4	33.4	33.4	31.4	28.3	33.1	29.7	36
40		25.6	25.6	26.5	26.5	-	-	26.7	24.4	28.2	25.7	40
48		-	-	-	-	-	-	19.7	18.9	20.7	19.9	48
56		-	-	-	-	-	-	14.6	14.5	15.4	15.3	56
64		-	-	-	-	-	-	11.0	11.0	11.7	11.7	64
72		-	-	-	-	-	-	8.2	8.2	8.9	8.9	72
80		-	-	-	-	-	-	5.9	5.9	6.3	6.3	80
88		-	-	-	-	-	-	4.1	4.1	4.4	4.4	88
96		-	-	-	-	-	-	-	-	2.8	2.8	96

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
48		13.4	12.7	-	-	-	-	11.3	-	-	-	48
56		9.5	9.2	10.5	10.3	11.6	11.2	7.5	-	8.7	-	56
64		6.3	6.3	7.2	7.2	8.1	8.1	4.5	-	5.6	-	64
72		3.8	3.8	4.7	4.7	5.4	5.4	-	-	2.9	-	72

Operation

HAV

0 lb +  33,100 lb		 36.1 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
10		77.9	69.2	-	-	-	-	-	-	-	-	10
12		73.4	66.0	-	-	-	-	-	-	-	-	12
14		69.3	62.9	-	-	-	-	-	-	-	-	14
16		65.6	59.9	-	-	-	-	-	-	-	-	16
18		62.2	57.2	-	-	-	-	-	-	-	-	18
20		59.1	54.5	44.9	-	-	-	-	-	-	-	20
24		53.6	50.1	41.9	39.7	-	-	-	-	-	-	24
28		48.8	46.2	39.3	37.4	-	-	-	-	-	-	28
32		41.3	40.8	36.9	35.3	29.0	27.8	34.8	28.5	-	-	32
36		34.4	34.4	34.0	33.2	27.5	26.4	30.9	27.4	-	-	36
40		28.5	28.5	30.8	30.8	26.0	24.9	26.6	23.8	27.6	-	40
48		21.0	21.0	22.7	22.7	22.8	22.2	20.3	18.7	22.7	20.9	48
56		16.1	16.1	17.2	17.2	18.0	18.0	15.5	14.6	17.2	16.5	56
64		12.6	12.6	13.1	13.1	-	-	11.7	11.4	13.1	13.0	64
72		-	-	-	-	-	-	8.9	8.9	10.2	10.2	72
80		-	-	-	-	-	-	6.7	6.7	7.9	7.9	80
88		-	-	-	-	-	-	4.7	4.7	6.0	6.0	88
96		-	-	-	-	-	-	3.3	3.3	4.2	4.2	96
104		-	-	-	-	-	-	-	-	2.8	2.8	104

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
48		13.7	-	-	-	-	-	-	-	-	-	48
56		9.5	9.1	-	-	-	-	-	-	-	-	56
64		6.1	6.1	8.4	-	-	-	-	-	-	-	64
72		3.6	3.6	5.6	5.6	7.6	-	-	-	-	-	72
80		-	-	3.5	3.5	5.2	5.2	-	-	-	-	80
88		-	-	-	-	3.2	3.2	-	-	-	-	88

Operation

0 lb + 33,100 lb		55.8 ft		15.6 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
14	49.3	-	-	-	-	-	-	-	-	-	-	14	
16	47.3	41.7	-	-	-	-	-	-	-	-	-	16	
18	45.5	40.4	-	-	-	-	-	-	-	-	-	18	
20	43.6	39.0	-	-	-	-	-	-	-	-	-	20	
24	40.0	36.3	-	-	-	-	-	-	-	-	-	24	
28	36.8	33.8	-	-	-	-	-	-	-	-	-	28	
32	34.1	31.5	26.4	-	-	-	-	-	-	-	-	32	
36	31.7	29.5	24.8	23.6	-	-	27.5	-	-	-	-	36	
40	29.2	27.4	23.4	22.3	-	-	26.4	23.4	-	-	-	40	
48	22.7	22.7	21.0	20.1	16.1	15.5	20.3	18.4	-	-	-	48	
56	17.5	17.5	18.7	17.9	14.6	14.1	15.5	14.6	17.8	16.9	-	56	
64	13.9	13.9	15.3	15.2	13.4	13.0	11.7	11.6	14.4	13.9	-	64	
72	11.1	11.1	12.2	12.2	12.6	12.1	9.1	9.1	11.3	11.3	13.0	13.0	72
80	9.2	9.2	9.8	9.8	-	-	6.8	6.8	8.9	8.9	10.5	10.5	80
88	-	-	-	-	-	-	5.2	5.2	7.0	7.0	8.4	8.4	88
96	-	-	-	-	-	-	3.7	3.7	5.3	5.3	6.7	6.7	96
104	-	-	-	-	-	-	2.6	2.6	3.9	3.9	5.0	5.0	104
112	-	-	-	-	-	-	-	-	-	-	3.7	3.7	112

		181.1 ft				196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
56	9.1	8.9	-	-	-	-	-	-	-	-	-	56
64	5.9	5.9	-	-	-	-	-	-	-	-	-	64
72	3.6	3.6	-	-	-	-	-	-	-	-	-	72

0 lb + 33,100 lb		75.5 ft		15.6 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
18	32.9	-	-	-	-	-	-	-	-	-	-	18	
20	32.1	26.6	-	-	-	-	-	-	-	-	-	20	
24	30.4	25.4	-	-	-	-	-	-	-	-	-	24	
28	28.7	24.2	-	-	-	-	-	-	-	-	-	28	
32	26.8	23.0	-	-	-	-	-	-	-	-	-	32	
36	25.2	21.7	-	-	-	-	-	-	-	-	-	36	
40	23.6	20.6	19.0	-	-	-	21.6	19.1	-	-	-	40	
48	20.9	18.5	16.7	15.6	-	-	18.6	17.0	-	-	-	48	
56	18.0	16.7	14.8	14.0	-	-	14.5	14.2	-	-	-	56	
64	14.6	14.4	13.3	12.6	10.1	9.9	11.0	11.0	12.2	-	-	64	
72	11.7	11.7	11.9	11.5	9.3	9.1	8.4	8.4	11.3	11.3	-	72	
80	9.7	9.7	10.8	10.4	8.7	8.3	6.3	6.3	8.9	8.9	9.5	9.0	80
88	8.1	8.1	9.1	9.1	8.1	7.8	4.6	4.6	7.0	7.0	8.8	8.5	88
96	6.7	6.7	7.5	7.5	7.7	7.4	3.3	3.3	5.3	5.3	7.4	7.4	96
104	5.6	5.6	6.1	6.1	-	-	-	-	4.1	4.1	5.9	5.9	104
112	-	-	-	-	-	-	-	-	-	-	4.6	4.6	112
120	-	-	-	-	-	-	-	-	-	-	3.3	3.3	120

Operation










HAV






99,200 lb +		33,100 lb		16.4 ft		11.5 ft		32.2 ft/s		360°		ASME B30.5		
		42.3 ft						126.0 ft						
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°
1,000 lb														
18	97.4	92.4	-	-	-	-	-	-	-	-	-	-	-	-
20	93.1	88.6	-	-	-	-	-	-	-	-	-	-	-	-
24	85.9	82.2	71.6	69.3	-	-	-	-	-	-	-	-	-	-
28	79.8	76.7	67.8	65.9	57.5	56.6	-	-	-	-	-	-	-	-
32	70.8	70.1	63.6	62.4	54.9	54.2	-	-	-	-	-	-	-	-
36	60.9	60.9	58.4	57.9	53.3	52.6	-	-	-	-	-	-	-	-
40	51.9	51.9	52.8	52.8	-	-	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	39.2	39.2	-	-	-	-	-	-
56	-	-	-	-	-	-	30.9	30.9	31.9	31.9	-	-	-	-
64	-	-	-	-	-	-	25.8	25.8	25.8	25.8	26.3	26.3	-	-
72	-	-	-	-	-	-	21.9	21.9	22.3	22.3	22.1	22.1	-	-
80	-	-	-	-	-	-	18.3	18.3	18.7	18.7	19.1	19.1	-	-
88	-	-	-	-	-	-	15.6	15.6	15.9	15.9	16.2	16.2	-	-
96	-	-	-	-	-	-	13.7	13.7	13.8	13.8	13.9	13.9	-	-
104	-	-	-	-	-	-	11.7	11.7	11.9	11.9	12.1	12.1	-	-
112	-	-	-	-	-	-	10.1	10.1	10.3	10.3	-	-	-	-
120	-	-	-	-	-	-	8.7	8.7	8.9	8.9	-	-	-	-
128	-	-	-	-	-	-	7.5	7.5	-	-	-	-	-	-
136	-	-	-	-	-	-	-	-	-	-	-	-	-	-
144	-	-	-	-	-	-	-	-	-	-	-	-	-	-

		181.1 ft						196.9 ft						
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°
1,000 lb														
72	19.9	19.0	-	-	-	-	-	-	-	-	-	-	-	-
80	16.5	16.5	16.8	16.6	16.9	16.9	15.6	15.5	16.2	16.1	16.7	16.7	-	-
88	13.6	13.6	14.1	14.1	14.5	14.5	12.8	12.8	13.3	13.3	13.9	13.9	-	-
96	11.2	11.2	11.7	11.7	12.1	12.1	10.2	10.2	10.9	10.9	11.3	11.3	-	-
104	9.1	9.1	9.7	9.7	10.0	10.0	8.2	8.2	8.6	8.6	9.1	9.1	-	-
112	7.4	7.4	7.8	7.8	8.1	8.1	6.3	6.3	6.7	6.7	7.2	7.2	-	-
120	5.8	5.8	6.1	6.1	6.5	6.5	4.8	4.8	5.2	5.2	5.6	5.6	-	-
128	4.4	4.4	4.7	4.7	5.0	5.0	3.4	3.4	3.9	3.9	4.1	4.1	-	-
136	3.3	3.3	3.5	3.5	3.8	3.8	-	-	2.7	2.7	2.9	2.9	-	-
144	-	-	2.5	2.5	2.7	2.7	-	-	-	-	-	-	-	-

Operation










HAV






99,200 lb +  33,100 lb		 36.1 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
24		53.6	50.1	-	-	-	-	-	-	-	-	24
28		49.2	46.2	-	-	-	-	-	-	-	-	28
32		45.3	42.9	-	-	-	-	-	-	-	-	32
36		42.1	40.1	34.9	33.3	-	-	-	-	-	-	36
40		39.1	37.4	33.0	31.5	26.0	24.9	-	-	-	-	40
48		34.7	33.2	29.1	28.1	23.5	22.7	-	-	-	-	48
56		30.8	29.6	26.2	25.4	22.0	21.4	30.9	30.7	-	-	56
64		27.2	26.2	24.1	23.5	-	-	25.6	25.6	26.3	26.3	64
72		-	-	-	-	-	-	21.3	21.3	22.6	22.6	72
80		-	-	-	-	-	-	18.5	18.5	18.9	18.9	80
88		-	-	-	-	-	-	16.2	16.2	16.4	15.9	88
96		-	-	-	-	-	-	13.9	13.9	14.1	13.9	96
104		-	-	-	-	-	-	11.9	11.9	12.3	12.3	104
112		-	-	-	-	-	-	10.5	10.5	10.7	10.7	112
120		-	-	-	-	-	-	9.2	9.2	9.4	9.4	120
128		-	-	-	-	-	-	8.0	8.0	8.0	8.0	128
136		-	-	-	-	-	-	6.9	6.9	7.1	7.1	136
144		-	-	-	-	-	-	5.8	5.8	6.0	6.0	144

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
80		16.3	15.9	17.8	17.6	-	-	15.8	15.3	-	-	80
88		14.0	13.9	14.7	14.7	15.6	15.6	12.9	12.9	14.4	14.2	88
96		11.9	11.9	12.6	12.5	13.2	13.2	10.4	10.4	12.0	11.9	96
104		9.7	9.7	10.8	10.8	11.4	11.4	8.4	8.4	9.7	9.7	104
112		8.1	8.1	8.9	8.9	9.6	9.6	6.7	6.7	7.8	7.8	112
120		6.5	6.5	7.3	7.3	8.0	8.0	5.2	5.2	6.3	6.3	120
128		5.0	5.0	5.8	5.8	6.5	6.5	4.0	4.0	5.0	5.0	128
136		3.8	3.8	4.5	4.5	5.2	5.2	2.9	2.9	3.6	3.6	136
144		2.7	2.7	3.4	3.4	3.8	3.8	-	-	2.5	2.5	144

Operation

HAV

99,200 lb +  33,100 lb		 55.8 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
32		34.1	31.5	-	-	-	-	-	-	-	-	32
36		31.7	29.5	-	-	-	-	-	-	-	-	36
40		29.5	27.5	-	-	-	-	-	-	-	-	40
48		25.8	24.4	21.0	20.1	-	-	-	-	-	-	48
56		22.9	21.7	18.9	17.9	-	-	28.9	25.0	-	-	56
64		20.3	19.2	16.9	16.2	13.4	13.0	25.5	23.8	-	-	64
72		18.1	17.2	15.5	14.8	12.6	12.1	21.9	21.2	-	-	72
80		16.3	15.7	14.2	13.8	-	-	18.5	18.1	18.3	17.3	80
88		-	-	-	-	-	-	15.8	15.7	16.5	16.1	88
96		-	-	-	-	-	-	14.0	13.4	14.4	14.4	96
104		-	-	-	-	-	-	12.1	12.0	12.6	12.6	104
112		-	-	-	-	-	-	10.3	10.3	10.7	10.7	112
120		-	-	-	-	-	-	9.4	9.4	9.7	9.7	120
128		-	-	-	-	-	-	8.3	8.3	8.6	8.6	128
136		-	-	-	-	-	-	7.1	7.1	7.7	7.7	136
144		-	-	-	-	-	-	6.2	6.2	6.7	6.7	144
152		-	-	-	-	-	-	5.4	5.4	5.7	5.7	152
160		-	-	-	-	-	-	4.6	4.6	5.0	5.0	160

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
80		16.5	15.4	-	-	-	-	14.7	12.6	-	-	80
88		13.6	13.5	14.5	14.4	-	-	12.9	12.2	-	-	88
96		11.8	11.7	13.3	13.1	-	-	10.6	10.6	12.0	11.9	96
104		9.9	9.9	11.3	11.3	11.8	11.5	8.6	8.6	10.6	10.6	104
112		8.3	8.3	9.6	9.6	10.7	10.7	6.8	6.8	8.7	8.7	112
120		7.0	7.0	8.4	8.4	9.1	9.1	5.4	5.4	7.1	7.1	120
128		5.6	5.6	6.9	6.9	7.9	7.9	4.2	4.2	5.7	5.7	128
136		4.4	4.4	5.8	5.8	6.7	6.7	3.1	3.1	4.5	4.5	136
144		3.4	3.4	4.5	4.5	5.4	5.4	-	-	3.6	3.6	144
152		-	-	3.4	3.4	4.3	4.3	-	-	-	-	152
160		-	-	-	-	3.2	3.2	-	-	-	-	160

Operation

HAV

99,200 lb + 33,100 lb		75.5 ft		11.5 ft		32.2 ft/s		360°		ASME B30.5	
		42.3 ft				126.0 ft					
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft
	0°		18°		36°		0°		18°		
1,000 lb											
36	25.2	21.7	-	-	-	-	-	-	-	-	36
40	23.6	20.6	-	-	-	-	-	-	-	-	40
48	20.9	18.5	-	-	-	-	-	-	-	-	48
56	18.5	16.7	14.8	14.0	-	-	-	-	-	-	56
64	16.3	15.1	13.3	12.6	-	-	19.2	17.4	-	-	64
72	14.6	13.5	11.9	11.5	-	-	18.1	16.6	-	-	72
80	13.0	12.2	10.9	10.5	8.7	8.3	17.0	15.7	13.3	12.3	80
88	11.8	11.1	10.1	9.6	8.1	7.8	15.3	14.7	12.5	11.7	88
96	10.8	10.2	9.3	9.0	7.7	7.4	13.6	13.3	11.7	11.0	96
104	10.0	9.4	8.7	8.4	-	-	11.7	11.7	11.1	10.4	104
112	-	-	-	-	-	-	10.1	10.1	10.6	10.1	112
120	-	-	-	-	-	-	9.0	9.0	9.8	9.5	120
128	-	-	-	-	-	-	7.8	7.8	8.5	8.5	128
136	-	-	-	-	-	-	7.0	7.0	7.5	7.5	136
144	-	-	-	-	-	-	6.2	6.2	6.4	6.4	144
152	-	-	-	-	-	-	5.2	5.2	5.8	5.8	152
160	-	-	-	-	-	-	4.5	4.5	5.0	5.0	160
168	-	-	-	-	-	-	3.9	3.9	4.2	4.2	168
176	-	-	-	-	-	-	3.4	3.4	3.6	3.6	176
184	-	-	-	-	-	-	2.8	2.8	-	-	184

		181.1 ft				196.9 ft						
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft	
	0°		18°		36°		0°		18°			36°
1,000 lb												
80	13.8	11.2	-	-	-	-	11.4	8.8	-	-	-	80
88	12.9	11.2	-	-	-	-	11.1	8.8	-	-	-	88
96	10.9	10.4	-	-	-	-	9.7	8.8	-	-	-	96
104	9.5	9.4	10.4	9.8	-	-	7.9	7.9	9.6	8.8	-	104
112	7.6	7.6	9.4	9.4	7.9	7.5	6.3	6.3	8.7	8.7	-	112
120	6.3	6.3	8.0	8.0	7.7	7.2	4.8	4.8	7.1	7.1	7.7	120
128	5.1	5.1	6.9	6.9	7.5	7.1	3.7	3.7	5.7	5.7	7.3	128
136	4.0	4.0	5.8	5.8	6.9	6.7	2.7	2.7	4.5	4.5	6.3	136
144	3.1	3.1	4.7	4.7	6.0	6.0	-	-	3.6	3.6	5.1	144
152	-	-	3.8	3.8	4.9	4.9	-	-	-	-	4.0	152
160	-	-	2.8	2.8	3.9	3.9	-	-	-	-	3.1	160









Operation



HAV

77,200 lb + 33,100 lb		16.4 ft		11.5 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft		
	0°		18°		36°		0°		18°			36°	
1,000 lb													
10	119.2	111.6	-	-	-	-	-	-	-	-	10		
12	113.1	106.0	86.0	82.2	-	-	-	-	-	-	12		
14	107.3	101.1	83.0	79.5	-	-	-	-	-	-	14		
16	102.0	96.4	80.3	77.0	67.3	64.9	-	-	-	-	16		
18	97.4	92.4	77.9	74.8	65.7	63.6	-	-	-	-	18		
20	93.1	88.6	75.5	72.7	64.1	62.4	-	-	-	-	20		
24	85.6	82.2	71.6	69.3	60.5	59.4	-	-	-	-	24		
28	74.4	73.3	67.8	65.9	57.5	56.6	64.3	57.5	-	-	28		
32	61.0	61.0	61.5	61.1	54.9	54.2	56.3	51.8	57.7	-	32		
36	51.9	51.9	53.0	53.0	50.5	50.1	49.9	46.1	50.3	47.2	36		
40	43.9	43.9	44.7	44.7	-	-	43.2	40.8	43.4	42.3	44.7	42.6	40
48	-	-	-	-	-	-	33.6	33.6	33.8	33.6	34.6	34.6	48
56	-	-	-	-	-	-	27.1	27.1	27.4	27.4	27.7	27.7	56
64	-	-	-	-	-	-	22.2	22.2	22.5	22.4	22.9	22.9	64
72	-	-	-	-	-	-	18.2	18.2	18.8	18.8	19.0	19.0	72
80	-	-	-	-	-	-	15.2	15.2	15.7	15.7	15.9	15.9	80
88	-	-	-	-	-	-	12.7	12.7	13.1	13.1	13.3	13.3	88
96	-	-	-	-	-	-	10.7	10.7	10.9	10.9	11.2	11.2	96
104	-	-	-	-	-	-	9.0	9.0	9.2	9.2	9.5	9.5	104
112	-	-	-	-	-	-	7.4	7.4	7.6	7.6	-	-	112
120	-	-	-	-	-	-	6.1	6.1	6.3	6.3	-	-	120
128	-	-	-	-	-	-	5.1	5.1	-	-	-	-	128

		181.1 ft				196.9 ft							
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft		
	0°		18°		36°		0°		18°			36°	
1,000 lb													
48	30.6	27.0	-	-	-	-	26.3	-	-	-	-	48	
56	24.8	22.9	24.9	23.5	26.0	24.1	22.7	20.9	23.9	-	-	56	
64	19.7	18.8	20.6	19.8	21.0	20.4	18.1	17.1	19.2	18.0	20.1	18.8	64
72	15.7	15.5	16.4	16.2	17.1	17.0	14.4	13.7	15.3	14.6	16.2	15.3	72
80	12.8	12.8	13.5	13.5	13.9	13.9	11.5	11.1	12.3	12.0	13.0	12.6	80
88	10.2	10.2	10.9	10.9	11.3	11.3	8.9	8.9	9.5	9.5	10.2	10.1	88
96	7.9	7.9	8.6	8.6	9.0	9.0	6.7	6.7	7.4	7.4	7.9	7.9	96
104	6.0	6.0	6.6	6.6	6.9	6.9	5.0	5.0	5.5	5.5	6.0	6.0	104
112	4.5	4.5	5.0	5.0	5.2	5.2	3.5	3.5	3.9	3.9	4.3	4.3	112
120	3.1	3.1	3.4	3.4	3.7	3.7	-	-	-	-	-	-	120

Operation

     																	
 																	
ft	0,3°		1°		0,3°		1°		0,3°		1°		0,3°		1°		ft
	0°		18°		36°		0°		18°		36°						
1,000 lb																	
10	77.9	69.2	-	-	-	-	-	-	-	-	-	-	-	-	-	10	
12	73.4	66.0	-	-	-	-	-	-	-	-	-	-	-	-	-	12	
14	69.3	62.9	-	-	-	-	-	-	-	-	-	-	-	-	-	14	
16	65.6	59.9	-	-	-	-	-	-	-	-	-	-	-	-	-	16	
18	62.2	57.2	-	-	-	-	-	-	-	-	-	-	-	-	-	18	
20	59.1	54.5	44.9	-	-	-	-	-	-	-	-	-	-	-	-	20	
24	53.6	50.1	41.9	39.7	-	-	-	-	-	-	-	-	-	-	-	24	
28	49.2	46.2	39.3	37.4	-	-	-	-	-	-	-	-	-	-	-	28	
32	45.3	42.9	36.9	35.3	29.0	27.8	51.0	45.2	-	-	-	-	-	-	-	32	
36	42.1	40.1	34.9	33.3	27.5	26.4	46.7	42.2	-	-	-	-	-	-	-	36	
40	39.1	37.4	33.0	31.5	26.0	24.9	42.2	39.7	37.4	-	-	-	-	-	-	40	
48	34.4	33.2	29.1	28.1	23.5	22.7	33.6	32.1	33.5	32.6	-	-	-	-	-	48	
56	28.9	28.7	26.2	25.4	22.0	21.4	27.0	26.9	28.3	28.3	25.1	24.4	-	-	-	56	
64	23.7	23.7	23.6	23.5	-	-	22.3	22.3	23.1	22.6	23.3	23.1	-	-	-	64	
72	-	-	-	-	-	-	18.6	18.6	19.1	19.0	19.5	19.5	-	-	-	72	
80	-	-	-	-	-	-	15.9	15.9	16.0	16.0	16.7	16.7	-	-	-	80	
88	-	-	-	-	-	-	13.4	13.4	13.8	13.8	14.1	14.1	-	-	-	88	
96	-	-	-	-	-	-	11.4	11.4	12.0	12.0	12.3	12.3	-	-	-	96	
104	-	-	-	-	-	-	9.5	9.5	10.2	10.2	10.6	10.6	-	-	-	104	
112	-	-	-	-	-	-	8.1	8.1	8.7	8.7	9.0	9.0	-	-	-	112	
120	-	-	-	-	-	-	6.7	6.7	7.2	7.2	7.6	7.6	-	-	-	120	
128	-	-	-	-	-	-	5.5	5.5	5.9	5.9	3.4	3.4	-	-	-	128	
136	-	-	-	-	-	-	4.4	4.4	4.9	4.9	-	-	-	-	-	136	
144	-	-	-	-	-	-	3.6	3.6	3.8	3.8	-	-	-	-	-	144	

 																	
ft	0,3°		1°		0,3°		1°		0,3°		1°		0,3°		1°		ft
	0°		18°		36°		0°		18°		36°						
1,000 lb																	
56	23.7	20.6	-	-	-	-	20.6	17.0	-	-	-	-	-	-	-	56	
64	19.8	18.3	19.3	-	-	-	18.1	16.3	-	-	-	-	-	-	-	64	
72	16.2	15.3	17.5	17.0	16.6	-	14.4	13.7	16.4	-	-	-	-	-	-	72	
80	13.0	12.7	14.7	14.2	15.3	15.1	11.3	11.1	13.2	12.7	14.7	14.1	-	-	-	80	
88	10.4	10.4	12.0	11.8	13.1	12.9	8.8	8.8	10.4	10.4	12.0	11.6	-	-	-	88	
96	8.3	8.3	9.7	9.7	10.8	10.8	6.7	6.7	8.1	8.1	9.6	9.5	-	-	-	96	
104	6.4	6.4	7.7	7.7	8.8	8.8	5.0	5.0	6.4	6.4	7.5	7.5	-	-	-	104	
112	5.0	5.0	6.1	6.1	7.0	7.0	3.5	3.5	4.8	4.8	5.9	5.9	-	-	-	112	
120	3.7	3.7	4.5	4.5	5.4	5.4	-	-	3.4	3.4	4.3	4.3	-	-	-	120	
128	-	-	3.3	3.3	4.0	4.0	-	-	-	-	3.1	3.1	-	-	-	128	
136	-	-	-	-	2.7	2.7	-	-	-	-	-	-	-	-	-	136	

Operation

HAV

77,200 lb + 33,100 lb		55.8 ft		11.5 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
													0°
1,000 lb													
14	49.3	-	-	-	-	-	-	-	-	-	-	-	14
16	47.3	41.7	-	-	-	-	-	-	-	-	-	-	16
18	45.5	40.4	-	-	-	-	-	-	-	-	-	-	18
20	43.6	39.0	-	-	-	-	-	-	-	-	-	-	20
24	40.0	36.3	-	-	-	-	-	-	-	-	-	-	24
28	36.8	33.8	-	-	-	-	-	-	-	-	-	-	28
32	34.1	31.5	26.4	-	-	-	-	-	-	-	-	-	32
36	31.7	29.5	24.8	23.6	-	-	33.9	28.3	-	-	-	-	36
40	29.5	27.5	23.4	22.3	-	-	32.9	27.7	-	-	-	-	40
48	25.8	24.4	21.0	20.1	16.1	15.5	30.5	26.3	-	-	-	-	48
56	22.9	21.7	18.9	17.9	14.6	14.1	27.0	24.5	22.1	20.7	-	-	56
64	20.3	19.2	16.9	16.2	13.4	13.0	22.4	21.9	20.8	19.5	-	-	64
72	18.1	17.2	15.5	14.8	12.6	12.1	18.6	18.4	19.4	18.3	14.3	13.7	72
80	16.3	15.7	14.2	13.8	-	-	15.7	15.7	16.7	16.7	13.8	13.1	80
88	-	-	-	-	-	-	13.5	13.5	14.1	14.1	13.3	12.6	88
96	-	-	-	-	-	-	11.7	11.6	12.3	12.3	12.5	12.2	96
104	-	-	-	-	-	-	10.1	10.1	10.7	10.7	11.2	11.2	104
112	-	-	-	-	-	-	8.7	8.7	9.4	9.4	9.8	9.6	112
120	-	-	-	-	-	-	7.4	7.4	8.3	8.3	8.6	8.6	120
128	-	-	-	-	-	-	6.2	6.2	6.9	6.9	7.5	7.5	128
136	-	-	-	-	-	-	5.1	5.1	5.8	5.8	6.3	6.3	136
144	-	-	-	-	-	-	4.2	4.2	4.7	4.7	5.1	5.1	144
152	-	-	-	-	-	-	3.4	3.4	3.9	3.9	-	-	152
160	-	-	-	-	-	-	2.7	2.7	3.1	3.1	-	-	160

		181.1 ft				196.9 ft							
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
													0°
1,000 lb													
56	19.6	15.7	-	-	-	-	-	-	-	-	-	-	56
64	18.4	15.7	-	-	-	-	15.8	12.6	-	-	-	-	64
72	15.9	14.8	-	-	-	-	14.2	12.6	-	-	-	-	72
80	12.8	12.6	14.7	14.2	-	-	11.1	11.1	13.9	-	-	-	80
88	10.3	10.3	12.5	12.4	12.8	12.0	8.8	8.8	11.3	11.2	-	-	88
96	8.3	8.3	10.4	10.4	11.6	11.2	6.7	6.7	9.0	9.0	10.8	10.8	96
104	6.6	6.6	8.4	8.4	10.1	10.1	5.0	5.0	7.1	7.1	9.1	9.1	104
112	5.2	5.2	6.8	6.8	8.3	8.3	3.7	3.7	5.4	5.4	7.2	7.2	112
120	3.9	3.9	5.4	5.4	6.7	6.7	-	-	4.2	4.2	5.6	5.6	120
128	2.9	2.9	4.2	4.2	5.5	5.5	-	-	3.0	3.0	4.4	4.4	128
136	-	-	3.1	3.1	4.3	4.3	-	-	-	-	3.2	3.2	136
144	-	-	-	-	3.1	3.1	-	-	-	-	-	-	144










Operation






77,200 lb + 33,100 lb		75.5 ft		11.5 ft		32.2 ft/s		360°		ASME B30.5		
		42.3 ft				126.0 ft						
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°
1,000 lb												
18	32.9	-	-	-	-	-	-	-	-	-	-	18
20	32.1	26.6	-	-	-	-	-	-	-	-	-	20
24	30.4	25.4	-	-	-	-	-	-	-	-	-	24
28	28.7	24.2	-	-	-	-	-	-	-	-	-	28
32	26.8	23.0	-	-	-	-	-	-	-	-	-	32
36	25.2	21.7	-	-	-	-	-	-	-	-	-	36
40	23.6	20.6	19.0	-	-	-	22.2	19.8	-	-	-	40
48	20.9	18.5	16.7	15.6	-	-	21.2	19.0	-	-	-	48
56	18.5	16.7	14.8	14.0	-	-	20.3	18.2	-	-	-	56
64	16.3	15.1	13.3	12.6	10.1	9.9	19.2	17.4	15.0	-	-	64
72	14.6	13.5	11.9	11.5	9.3	9.1	17.7	16.6	14.1	13.0	-	72
80	13.0	12.2	10.9	10.5	8.7	8.3	15.2	15.2	13.3	12.3	9.6	80
88	11.8	11.1	10.1	9.6	8.1	7.8	13.4	13.4	12.5	11.7	9.2	88
96	10.8	10.2	9.3	9.0	7.7	7.4	11.2	11.2	11.7	11.0	8.8	96
104	10.0	9.4	8.7	8.4	-	-	9.9	9.9	10.9	10.4	8.4	104
112	-	-	-	-	-	-	8.8	8.8	9.4	9.4	8.1	112
120	-	-	-	-	-	-	7.6	7.6	8.1	8.1	7.9	120
128	-	-	-	-	-	-	6.4	6.4	7.2	7.2	7.3	128
136	-	-	-	-	-	-	5.3	5.3	6.2	6.2	6.7	136
144	-	-	-	-	-	-	4.2	4.2	5.1	5.1	6.0	144
152	-	-	-	-	-	-	3.4	3.4	4.3	4.3	4.9	152
160	-	-	-	-	-	-	2.7	2.7	3.5	3.5	3.9	160

		181.1 ft				196.9 ft						
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°
1,000 lb												
64	14.4	11.2	-	-	-	-	-	-	-	-	-	64
72	14.1	11.2	-	-	-	-	11.7	8.8	-	-	-	72
80	12.0	10.9	-	-	-	-	10.2	8.8	-	-	-	80
88	9.6	9.6	11.3	10.6	-	-	8.0	8.0	-	-	-	88
96	7.6	7.6	10.0	9.9	-	-	6.1	6.1	9.0	-	-	96
104	5.9	5.9	8.4	8.4	8.2	-	4.4	4.4	7.1	7.1	-	104
112	4.6	4.6	6.8	6.8	7.9	7.5	-	-	5.4	5.4	7.6	112
120	3.5	3.5	5.4	5.4	7.4	7.1	-	-	4.2	4.2	6.3	120
128	-	-	4.2	4.2	6.1	6.1	-	-	3.1	3.1	5.0	128
136	-	-	3.1	3.1	4.9	4.9	-	-	-	-	3.8	136
144	-	-	-	-	3.8	3.8	-	-	-	-	2.7	144

Operation










HAV






55,100 lb +  33,100 lb		 16.4 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
10	119.2	111.6	89.3	-	-	-	-	-	-	-	-	10	
12	113.1	106.0	86.0	82.2	-	-	-	-	-	-	-	12	
14	107.3	101.1	83.0	79.5	-	-	-	-	-	-	-	14	
16	102.0	96.4	80.3	77.0	67.3	64.9	-	-	-	-	-	16	
18	97.4	92.4	77.9	74.8	65.7	63.6	-	-	-	-	-	18	
20	92.7	88.5	75.5	72.7	64.1	62.4	-	-	-	-	-	20	
24	78.1	78.1	71.6	69.3	60.5	59.4	-	-	-	-	-	24	
28	61.8	61.8	63.5	62.5	57.5	56.6	54.3	49.7	-	-	-	28	
32	50.3	50.3	51.7	51.7	52.1	51.9	48.0	44.2	48.9	43.8	-	32	
36	42.6	42.6	43.7	43.7	44.5	44.5	41.8	39.4	42.4	39.9	43.9	38.7	36
40	35.8	35.8	36.7	36.7	-	-	36.7	35.4	37.1	36.0	37.8	36.4	40
48	-	-	-	-	-	-	28.2	28.2	29.2	29.2	29.6	29.6	48
56	-	-	-	-	-	-	22.0	22.0	22.8	22.8	23.3	23.3	56
64	-	-	-	-	-	-	17.4	17.4	18.1	18.1	18.5	18.5	64
72	-	-	-	-	-	-	14.0	14.0	14.6	14.6	14.8	14.8	72
80	-	-	-	-	-	-	11.3	11.3	11.8	11.8	12.2	12.2	80
88	-	-	-	-	-	-	9.3	9.3	9.7	9.7	9.9	9.9	88
96	-	-	-	-	-	-	7.4	7.4	7.8	7.8	8.1	8.1	96
104	-	-	-	-	-	-	5.7	5.7	6.2	6.2	6.2	6.2	104
112	-	-	-	-	-	-	4.6	4.6	4.8	4.8	-	-	112
120	-	-	-	-	-	-	3.3	3.3	3.5	3.5	-	-	120

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
48	23.5	21.5	-	-	-	-	21.3	-	-	-	-	48	
56	18.3	17.2	19.5	18.3	20.4	19.1	16.4	15.3	17.5	-	-	56	
64	14.4	13.7	15.3	14.6	16.2	15.3	12.4	11.9	13.5	13.0	14.4	13.7	64
72	11.1	10.9	12.0	11.5	12.6	12.2	9.3	9.3	10.2	10.0	11.1	10.6	72
80	8.4	8.4	9.1	9.1	9.9	9.8	6.7	6.7	7.6	7.6	8.3	8.3	80
88	6.2	6.2	6.9	6.9	7.4	7.4	4.7	4.7	5.4	5.4	6.1	6.1	88
96	4.5	4.5	5.0	5.0	5.4	5.4	2.9	2.9	3.6	3.6	4.1	4.1	96
104	2.8	2.8	3.3	3.3	3.7	3.7	-	-	-	-	2.4	2.4	104

Operation










HAV






55,100 lb +  33,100 lb		 36.1 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5				
		 42.3 ft				 126.0 ft								
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		36°		
ft		1,000 lb												ft
10		77.9	69.2	-	-	-	-	-	-	-	-	-	-	10
12		73.4	66.0	-	-	-	-	-	-	-	-	-	-	12
14		69.3	62.9	-	-	-	-	-	-	-	-	-	-	14
16		65.6	59.9	-	-	-	-	-	-	-	-	-	-	16
18		62.2	57.2	-	-	-	-	-	-	-	-	-	-	18
20		59.1	54.5	44.9	-	-	-	-	-	-	-	-	-	20
24		53.6	50.1	41.9	39.7	-	-	-	-	-	-	-	-	24
28		49.2	46.2	39.3	37.4	-	-	-	-	-	-	-	-	28
32		45.3	42.9	36.9	35.3	29.0	27.8	45.6	39.7	-	-	-	-	32
36		42.0	40.1	34.9	33.3	27.5	26.4	40.4	36.5	-	-	-	-	36
40		38.5	37.1	33.0	31.5	26.0	24.9	36.3	33.8	36.8	-	-	-	40
48		29.5	29.5	29.0	28.1	23.5	22.7	28.6	27.9	29.4	27.9	-	-	48
56		23.3	23.3	24.4	24.2	22.0	21.4	22.8	22.7	23.4	23.3	23.8	23.4	56
64		18.9	18.9	19.4	19.4	-	-	18.2	18.2	19.3	19.3	19.7	19.7	64
72		-	-	-	-	-	-	14.6	14.6	16.0	16.0	16.8	16.8	72
80		-	-	-	-	-	-	12.0	12.0	13.1	13.1	13.9	13.9	80
88		-	-	-	-	-	-	9.9	9.9	10.8	10.8	11.4	11.4	88
96		-	-	-	-	-	-	8.1	8.1	8.9	8.9	9.4	9.4	96
104		-	-	-	-	-	-	6.6	6.6	7.3	7.3	7.9	7.9	104
112		-	-	-	-	-	-	5.0	5.0	5.7	5.7	6.3	6.3	112
120		-	-	-	-	-	-	3.9	3.9	4.5	4.5	4.8	4.8	120
128		-	-	-	-	-	-	3.0	3.0	3.4	3.4	-	-	128
136		-	-	-	-	-	-	-	-	2.4	2.4	-	-	136

		 181.1 ft				 196.9 ft								
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		36°		
ft		1,000 lb												ft
48		22.7	-	-	-	-	-	-	-	-	-	-	-	48
56		18.4	16.9	-	-	-	-	16.4	15.0	-	-	-	-	56
64		14.3	13.4	16.5	-	-	-	12.4	11.8	-	-	-	-	64
72		10.9	10.6	12.9	12.4	14.6	-	9.1	9.1	11.3	-	-	-	72
80		8.3	8.3	10.0	10.0	11.5	11.3	6.7	6.7	8.4	8.4	10.2	10.0	80
88		6.2	6.2	7.7	7.7	9.1	9.0	4.7	4.7	6.2	6.2	7.8	7.7	88
96		4.5	4.5	5.8	5.8	7.0	7.0	2.9	2.9	4.3	4.3	5.6	5.6	96
104		3.0	3.0	4.2	4.2	5.3	5.3	-	-	2.8	2.8	3.9	3.9	104
112		-	-	-	-	3.7	3.7	-	-	-	-	-	-	112










Operation






HAV

55,100 lb +  33,100 lb		 55.8 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
14	49.3	-	-	-	-	-	-	-	-	-	-	14
16	47.3	41.7	-	-	-	-	-	-	-	-	-	16
18	45.5	40.4	-	-	-	-	-	-	-	-	-	18
20	43.6	39.0	-	-	-	-	-	-	-	-	-	20
24	40.0	36.3	-	-	-	-	-	-	-	-	-	24
28	36.8	33.8	-	-	-	-	-	-	-	-	-	28
32	34.1	31.5	26.4	-	-	-	-	-	-	-	-	32
36	31.7	29.5	24.8	23.6	-	-	33.9	28.3	-	-	-	36
40	29.5	27.5	23.4	22.3	-	-	32.5	27.5	-	-	-	40
48	25.8	24.4	21.0	20.1	16.1	15.5	28.4	24.9	-	-	-	48
56	22.9	21.7	18.9	17.9	14.6	14.1	22.6	21.3	22.0	20.7	-	56
64	20.0	19.2	16.9	16.2	13.4	13.0	18.6	18.6	19.4	18.8	-	64
72	16.8	16.8	15.5	14.8	12.6	12.1	15.5	15.5	16.4	16.4	14.3	72
80	14.2	14.2	14.1	13.8	-	-	12.7	12.7	14.0	14.0	13.6	80
88	-	-	-	-	-	-	10.6	10.6	11.8	11.8	12.4	88
96	-	-	-	-	-	-	8.9	8.9	10.0	10.0	10.9	96
104	-	-	-	-	-	-	7.3	7.3	8.4	8.4	9.2	104
112	-	-	-	-	-	-	5.9	5.9	7.0	7.0	7.6	112
120	-	-	-	-	-	-	4.6	4.6	5.6	5.6	6.3	120
128	-	-	-	-	-	-	3.6	3.6	4.4	4.4	5.1	128
136	-	-	-	-	-	-	2.7	2.7	3.3	3.3	3.8	136
144	-	-	-	-	-	-	-	-	2.5	2.5	2.9	144

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
56	17.4	15.2	-	-	-	-	-	-	-	-	-	56
64	14.0	13.4	-	-	-	-	12.2	11.4	-	-	-	64
72	10.7	10.6	-	-	-	-	8.9	8.9	-	-	-	72
80	8.3	8.3	10.9	10.7	-	-	6.5	6.5	9.3	-	-	80
88	6.2	6.2	8.5	8.5	10.6	10.5	4.5	4.5	7.1	7.1	-	88
96	4.5	4.5	6.5	6.5	8.5	8.5	2.9	2.9	5.2	5.2	7.3	96
104	3.0	3.0	4.8	4.8	6.6	6.6	-	-	3.5	3.5	5.5	104
112	-	-	3.5	3.5	5.0	5.0	-	-	-	-	3.9	112
120	-	-	-	-	3.7	3.7	-	-	-	-	-	120










Operation






55,100 lb +  33,100 lb		 75.5 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
18		32.9	-	-	-	-	-	-	-	-	-	18
20		32.1	26.6	-	-	-	-	-	-	-	-	20
24		30.4	25.4	-	-	-	-	-	-	-	-	24
28		28.7	24.2	-	-	-	-	-	-	-	-	28
32		26.8	23.0	-	-	-	-	-	-	-	-	32
36		25.2	21.7	-	-	-	-	-	-	-	-	36
40		23.6	20.6	19.0	-	-	-	22.2	19.8	-	-	40
48		20.9	18.5	16.7	15.6	-	-	21.2	19.0	-	-	48
56		18.5	16.7	14.8	14.0	-	-	19.8	17.7	-	-	56
64		16.3	15.1	13.3	12.6	10.1	9.9	17.6	16.7	15.0	-	64
72		14.6	13.5	11.9	11.5	9.3	9.1	15.2	15.0	14.1	13.0	72
80		13.0	12.2	10.9	10.5	8.7	8.3	12.7	12.7	13.1	12.2	80
88		11.8	11.1	10.1	9.6	8.1	7.8	10.5	10.5	11.8	11.3	88
96		10.7	10.2	9.3	9.0	7.7	7.4	8.6	8.6	10.2	10.2	96
104		9.4	9.4	8.7	8.4	-	-	7.2	7.2	8.8	8.8	104
112		-	-	-	-	-	-	5.9	5.9	7.4	7.4	112
120		-	-	-	-	-	-	4.8	4.8	6.1	6.1	120
128		-	-	-	-	-	-	3.7	3.7	4.8	4.8	128
136		-	-	-	-	-	-	2.8	2.8	3.9	3.9	136
144		-	-	-	-	-	-	-	-	2.9	2.9	144

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
64		12.5	11.2	-	-	-	-	-	-	-	-	64
72		9.8	9.7	-	-	-	-	8.0	8.0	-	-	72
80		7.4	7.4	-	-	-	-	5.7	5.7	-	-	80
88		5.4	5.4	8.4	8.4	-	-	3.9	3.9	-	-	88
96		3.8	3.8	6.5	6.5	-	-	-	-	5.2	-	96
104		2.4	2.4	4.8	4.8	7.3	-	-	-	3.5	-	104
112		-	-	3.5	3.5	5.7	5.7	-	-	-	-	112
120		-	-	-	-	4.3	4.3	-	-	-	-	120
128		-	-	-	-	3.1	3.1	-	-	-	-	128

Operation

HAV

33,100 lb +  33,100 lb		 16.4 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
10		119.2	111.6	89.3	-	-	-	-	-	-	-	10
12		113.1	106.0	86.0	82.2	-	-	-	-	-	-	12
14		107.3	101.1	83.0	79.5	-	-	-	-	-	-	14
16		102.0	96.4	80.3	77.0	67.3	64.9	-	-	-	-	16
18		93.6	90.0	77.9	74.8	65.7	63.6	-	-	-	-	18
20		83.9	82.5	75.2	72.6	64.1	62.4	-	-	-	-	20
24		62.8	62.8	65.3	65.3	60.2	59.4	-	-	-	-	24
28		49.3	49.3	51.2	51.2	52.6	52.6	45.5	40.6	-	-	28
32		39.8	39.8	41.3	41.3	42.4	42.4	39.3	35.2	40.8	33.9	32
36		33.4	33.4	34.5	34.5	35.3	35.3	34.2	31.0	35.5	32.4	36
40		27.8	27.8	28.7	28.7	-	-	29.3	27.1	30.4	28.4	40
48		-	-	-	-	-	-	21.7	21.2	22.7	22.2	48
56		-	-	-	-	-	-	16.5	16.5	17.3	17.3	56
64		-	-	-	-	-	-	12.8	12.8	13.5	13.5	64
72		-	-	-	-	-	-	10.0	10.0	10.4	10.4	72
80		-	-	-	-	-	-	7.6	7.6	8.0	8.0	80
88		-	-	-	-	-	-	5.6	5.6	6.0	6.0	88
96		-	-	-	-	-	-	4.0	4.0	4.4	4.4	96
104		-	-	-	-	-	-	2.6	2.6	3.0	3.0	104

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
48		16.2	15.1	-	-	-	-	14.1	-	-	-	48
56		12.0	11.4	13.1	12.5	14.1	13.3	10.2	9.7	11.4	-	56
64		8.8	8.5	9.7	9.4	10.4	10.1	7.0	6.9	7.9	7.8	64
72		6.0	6.0	6.9	6.9	7.6	7.5	4.2	4.2	5.3	5.3	72
80		3.9	3.9	4.6	4.6	5.2	5.2	-	-	-	-	80
88		-	-	-	-	3.3	3.3	-	-	-	-	88

Operation










HAV






33,100 lb + 33,100 lb		36.1 ft		11.5 ft		32.2 ft/s		360°		ASME B30.5	
		42.3 ft				126.0 ft					
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft
	0°		18°		36°		0°		18°		
1,000 lb											
10	77.9	69.2	-	-	-	-	-	-	-	-	10
12	73.4	66.0	-	-	-	-	-	-	-	-	12
14	69.3	62.9	-	-	-	-	-	-	-	-	14
16	65.6	59.9	-	-	-	-	-	-	-	-	16
18	62.2	57.2	-	-	-	-	-	-	-	-	18
20	59.1	54.5	44.9	-	-	-	-	-	-	-	20
24	53.6	50.1	41.9	39.7	-	-	-	-	-	-	24
28	49.2	46.2	39.3	37.4	-	-	-	-	-	-	28
32	42.6	41.9	36.9	35.3	29.0	27.8	37.5	31.1	-	-	32
36	36.2	36.2	34.9	33.3	27.5	26.4	33.6	30.0	-	-	36
40	30.5	30.5	32.6	31.2	26.0	24.9	29.4	26.4	28.3	-	40
48	23.0	23.0	24.4	24.4	23.4	22.7	22.5	20.9	24.0	23.2	48
56	18.0	18.0	18.9	18.9	19.8	19.7	17.3	16.9	18.9	18.6	56
64	14.2	14.2	14.9	14.9	-	-	13.5	13.4	14.9	14.9	64
72	-	-	-	-	-	-	10.6	10.6	11.7	11.7	72
80	-	-	-	-	-	-	8.3	8.3	9.4	9.4	80
88	-	-	-	-	-	-	6.4	6.4	7.4	7.4	88
96	-	-	-	-	-	-	4.7	4.7	5.6	5.6	96
104	-	-	-	-	-	-	3.4	3.4	4.1	4.1	104
112	-	-	-	-	-	-	-	-	-	-	112

		181.1 ft				196.9 ft					
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft
	0°		18°		36°		0°		18°		
1,000 lb											
48	16.3	-	-	-	-	-	-	-	-	-	48
56	12.1	11.3	-	-	-	-	10.1	9.5	-	-	56
64	8.6	8.5	10.8	-	-	-	6.8	6.7	-	-	64
72	5.8	5.8	7.8	7.8	9.6	-	4.0	4.0	6.2	-	72
80	3.7	3.7	5.4	5.4	7.1	6.9	-	-	3.9	-	80
88	-	-	3.6	3.6	4.9	4.9	-	-	-	-	88
96	-	-	-	-	3.1	3.1	-	-	-	-	96










Operation






HAV

33,100 lb +  33,100 lb		 55.8 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
14		49.3	-	-	-	-	-	-	-	-	-	14
16		47.3	41.7	-	-	-	-	-	-	-	-	16
18		45.5	40.4	-	-	-	-	-	-	-	-	18
20		43.6	39.0	-	-	-	-	-	-	-	-	20
24		40.0	36.3	-	-	-	-	-	-	-	-	24
28		36.8	33.8	-	-	-	-	-	-	-	-	28
32		34.1	31.5	26.4	-	-	-	-	-	-	-	32
36		31.7	29.5	24.8	23.6	-	-	30.3	25.0	-	-	36
40		29.4	27.5	23.4	22.3	-	-	27.5	24.6	-	-	40
48		24.6	24.0	21.0	20.1	16.1	15.5	22.9	20.6	-	-	48
56		19.4	19.4	18.9	17.9	14.6	14.1	18.0	16.8	19.7	18.2	56
64		15.5	15.5	16.6	16.2	13.4	13.0	14.0	13.6	16.0	15.8	64
72		12.6	12.6	13.7	13.7	12.6	12.1	11.1	11.1	13.1	13.1	72
80		10.5	10.5	11.1	11.1	-	-	8.7	8.7	10.5	10.5	80
88		-	-	-	-	-	-	7.0	7.0	8.6	8.6	88
96		-	-	-	-	-	-	5.5	5.5	6.9	6.9	96
104		-	-	-	-	-	-	4.1	4.1	5.3	5.3	104
112		-	-	-	-	-	-	-	-	4.1	4.1	112
120		-	-	-	-	-	-	-	-	2.8	2.8	120

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
56		11.7	11.0	-	-	-	-	-	-	-	-	56
64		8.3	8.3	-	-	-	-	6.3	6.3	-	-	64
72		5.8	5.8	-	-	-	-	4.0	4.0	-	-	72
80		3.7	3.7	6.3	6.3	-	-	-	-	-	-	80
88		-	-	4.3	4.3	6.6	6.6	-	-	-	-	88
96		-	-	2.8	2.8	4.7	4.7	-	-	-	-	96
104		-	-	-	-	3.3	3.3	-	-	-	-	104










Operation






33,100 lb +  33,100 lb		 75.5 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
18		32.9	-	-	-	-	-	-	-	-	-	18
20		32.1	26.6	-	-	-	-	-	-	-	-	20
24		30.4	25.4	-	-	-	-	-	-	-	-	24
28		28.7	24.2	-	-	-	-	-	-	-	-	28
32		26.8	23.0	-	-	-	-	-	-	-	-	32
36		25.2	21.7	-	-	-	-	-	-	-	-	36
40		23.6	20.6	19.0	-	-	-	22.0	19.6	-	-	40
48		20.9	18.5	16.7	15.6	-	-	19.8	17.8	-	-	48
56		18.5	16.7	14.8	14.0	-	-	17.0	15.8	-	-	56
64		16.1	15.1	13.3	12.6	10.1	9.9	13.3	13.2	14.0	-	64
72		13.3	13.3	11.9	11.5	9.3	9.1	10.4	10.4	13.0	12.6	72
80		11.2	11.2	10.9	10.5	8.7	8.3	8.1	8.1	10.7	10.7	80
88		9.4	9.4	10.0	9.6	8.1	7.8	6.4	6.4	8.6	8.6	88
96		7.9	7.9	8.6	8.6	7.7	7.4	5.0	5.0	6.9	6.9	96
104		6.7	6.7	7.2	7.2	-	-	3.7	3.7	5.5	5.5	104
112		-	-	-	-	-	-	-	-	4.3	4.3	112
120		-	-	-	-	-	-	-	-	3.3	3.3	120
128		-	-	-	-	-	-	-	-	-	-	128

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
64		7.2	7.2	-	-	-	-	-	-	-	-	64
72		4.7	4.7	-	-	-	-	-	-	-	-	72

Operation

HAV

11,000 lb +  33,100 lb		 16.4 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5			
 42.3 ft						 126.0 ft							
 		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
0°		18°		36°		0°		18°		36°			
ft	1,000 lb										ft		
10	119.2	111.6	89.3	-	-	-	-	-	-	-	-	10	
12	113.1	105.8	86.0	82.2	-	-	-	-	-	-	-	12	
14	104.4	95.5	83.0	79.5	-	-	-	-	-	-	-	14	
16	90.5	81.9	80.3	77.0	67.3	64.9	-	-	-	-	-	16	
18	76.9	71.9	74.6	72.1	65.7	63.6	-	-	-	-	-	18	
20	64.3	62.7	67.5	66.1	63.5	61.9	-	-	-	-	-	20	
24	47.6	47.6	50.0	50.0	52.0	52.0	-	-	-	-	-	24	
28	36.9	36.9	38.6	38.6	40.1	40.1	33.7	29.6	-	-	-	28	
32	29.4	29.4	30.7	30.7	31.7	31.7	28.4	25.3	30.1	24.2	-	32	
36	24.2	24.2	25.4	25.4	26.0	26.0	24.3	21.9	25.9	23.3	27.3	22.1	36
40	19.8	19.8	20.6	20.6	-	-	20.7	18.8	22.0	20.1	23.3	21.2	40
48	-	-	-	-	-	-	15.1	14.2	16.2	15.3	17.0	16.1	48
56	-	-	-	-	-	-	11.0	10.6	11.8	11.6	12.5	12.3	56
64	-	-	-	-	-	-	7.9	7.8	8.7	8.7	9.2	9.2	64
72	-	-	-	-	-	-	5.3	5.3	6.0	6.0	6.5	6.5	72
80	-	-	-	-	-	-	3.5	3.5	3.9	3.9	4.3	4.3	80

 181.1 ft						 196.9 ft						
 		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
0°		18°		36°		0°		18°		36°		
ft	1,000 lb										ft	
48	9.0	8.6	-	-	-	-	-	-	-	-	-	48
56	5.8	5.7	-	-	-	-	-	-	-	-	-	56
64	3.1	3.1	-	-	-	-	-	-	-	-	-	64
72	-	-	-	-	-	-	-	-	-	-	-	72

Operation










11,000 lb + 33,100 lb		36.1 ft		11.5 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
													0°
	1,000 lb												
10	77.9	69.2	-	-	-	-	-	-	-	-	-	-	10
12	73.4	66.0	-	-	-	-	-	-	-	-	-	-	12
14	69.3	62.9	-	-	-	-	-	-	-	-	-	-	14
16	65.6	59.9	-	-	-	-	-	-	-	-	-	-	16
18	62.2	57.2	-	-	-	-	-	-	-	-	-	-	18
20	59.0	54.5	44.9	-	-	-	-	-	-	-	-	-	20
24	51.2	48.9	41.9	39.7	-	-	-	-	-	-	-	-	24
28	40.1	40.1	39.3	37.4	-	-	-	-	-	-	-	-	28
32	32.3	32.3	34.9	34.4	29.0	27.8	27.2	21.9	-	-	-	-	32
36	27.0	27.0	29.5	29.5	27.5	26.4	24.0	21.3	-	-	-	-	36
40	22.4	22.4	24.6	24.6	25.7	24.7	20.5	18.4	22.7	-	-	-	40
48	16.5	16.5	18.1	18.1	19.3	19.3	15.4	14.1	17.8	16.2	-	-	48
56	12.4	12.4	13.4	13.4	14.2	14.2	11.4	10.8	13.4	12.5	14.9	14.1	56
64	9.5	9.5	10.1	10.1	-	-	8.3	8.0	10.1	9.6	11.2	11.0	64
72	-	-	-	-	-	-	5.8	5.8	7.3	7.3	8.7	8.4	72
80	-	-	-	-	-	-	4.0	4.0	5.3	5.3	6.5	6.3	80
88	-	-	-	-	-	-	-	-	3.6	3.6	4.5	4.5	88
96	-	-	-	-	-	-	-	-	-	-	2.9	2.9	96










		181.1 ft				196.9 ft							
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
													0°
	1,000 lb												
48	9.1	-	-	-	-	-	-	-	-	-	-	-	48
56	5.5	-	-	-	-	-	-	-	-	-	-	-	56
64	2.9	-	-	-	-	-	-	-	-	-	-	-	64

11,000 lb + 33,100 lb		55.8 ft		11.5 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
													0°
	1,000 lb												
14	49.3	-	-	-	-	-	-	-	-	-	-	-	14
16	47.3	41.7	-	-	-	-	-	-	-	-	-	-	16
18	45.5	40.4	-	-	-	-	-	-	-	-	-	-	18
20	43.6	39.0	-	-	-	-	-	-	-	-	-	-	20
24	40.0	36.3	-	-	-	-	-	-	-	-	-	-	24
28	36.8	33.8	-	-	-	-	-	-	-	-	-	-	28
32	33.6	31.5	26.4	-	-	-	-	-	-	-	-	-	32
36	28.9	28.0	24.8	23.6	-	-	21.1	-	-	-	-	-	36
40	24.2	24.2	23.4	22.3	-	-	20.5	18.0	-	-	-	-	40
48	18.2	18.2	20.3	19.7	16.1	15.5	15.4	13.9	-	-	-	-	48
56	13.9	13.9	15.6	15.6	14.6	14.1	11.3	10.7	14.3	12.9	-	-	56
64	10.9	10.9	12.1	12.1	13.1	13.0	8.3	8.2	10.8	10.5	-	-	64
72	8.6	8.6	9.5	9.5	10.4	10.4	6.0	6.0	8.2	8.2	10.2	10.0	72
80	6.8	6.8	7.5	7.5	-	-	4.2	4.2	6.1	6.1	8.0	7.9	80
88	-	-	-	-	-	-	-	-	4.5	4.5	6.1	6.1	88
96	-	-	-	-	-	-	-	-	3.1	3.1	4.5	4.5	96
104	-	-	-	-	-	-	-	-	-	-	3.2	3.2	104

Operation

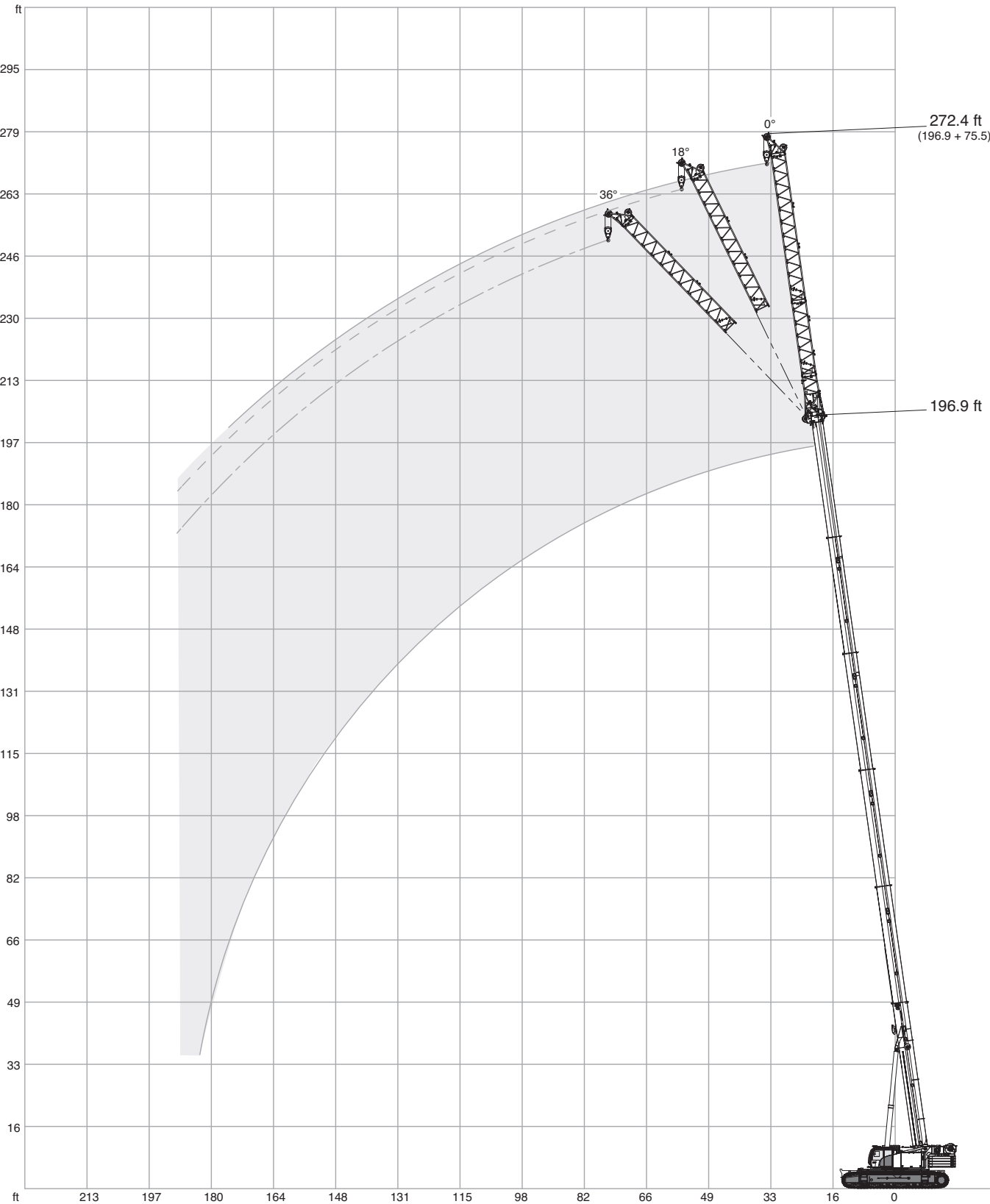
HAV

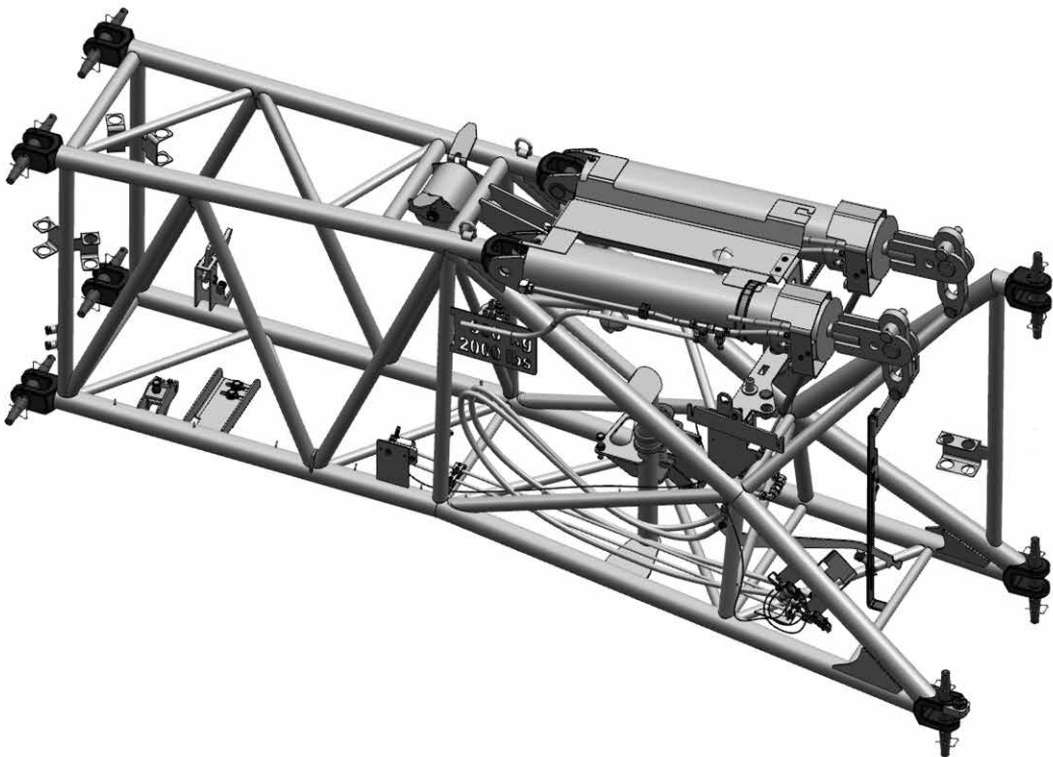
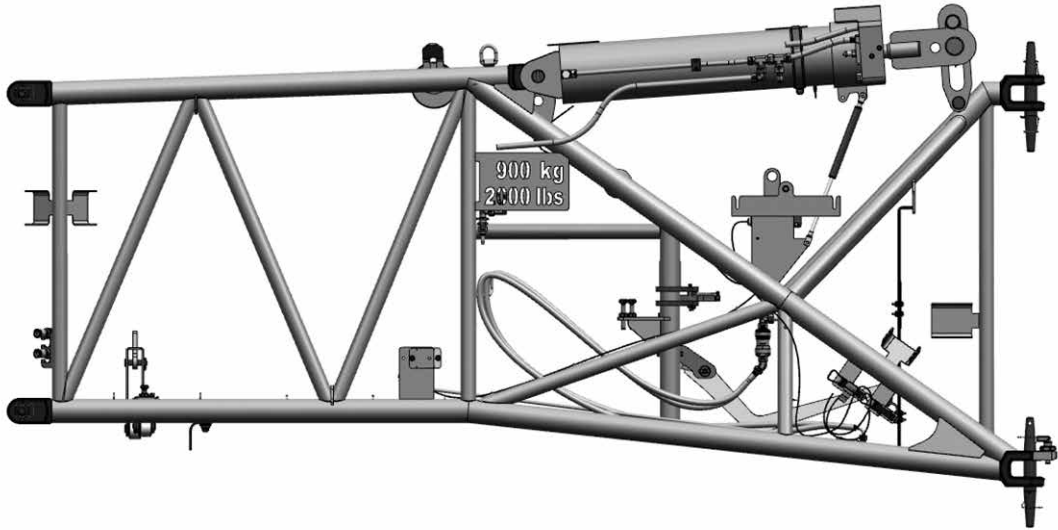
0 lb +  33,100 lb		 16.4 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
10	119.2	111.0	89.3	-	-	-	-	-	-	-	-	10	
12	109.6	97.0	86.0	82.2	-	-	-	-	-	-	-	12	
14	91.4	81.4	83.0	79.5	-	-	-	-	-	-	-	14	
16	77.3	69.6	80.0	73.3	67.3	64.9	-	-	-	-	-	16	
18	65.6	60.8	69.6	64.7	64.7	62.8	-	-	-	-	-	18	
20	54.7	52.8	58.0	56.2	60.8	59.6	-	-	-	-	-	20	
24	40.2	40.2	42.5	42.5	44.5	44.5	-	-	-	-	-	24	
28	30.8	30.8	32.5	32.5	33.9	33.9	27.6	24.1	-	-	-	28	
32	24.1	24.1	25.5	25.5	26.7	26.7	22.9	20.3	24.5	19.3	-	32	
36	19.7	19.7	20.8	20.8	21.6	21.6	19.4	17.4	20.8	18.8	22.2	17.6	36
40	15.9	15.9	16.7	16.7	-	-	16.1	14.7	17.5	16.0	18.7	17.0	40
48	-	-	-	-	-	-	11.4	10.6	12.6	11.7	13.4	12.5	48
56	-	-	-	-	-	-	8.0	7.4	8.8	8.4	9.6	9.1	56
64	-	-	-	-	-	-	5.2	5.1	6.1	5.8	6.7	6.4	64
72	-	-	-	-	-	-	3.1	3.1	3.8	3.8	4.2	4.2	72

0 lb +  33,100 lb		 36.1 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
10	77.9	69.2	-	-	-	-	-	-	-	-	-	10	
12	73.4	66.0	-	-	-	-	-	-	-	-	-	12	
14	69.3	62.9	-	-	-	-	-	-	-	-	-	14	
16	65.6	59.9	-	-	-	-	-	-	-	-	-	16	
18	61.4	55.8	-	-	-	-	-	-	-	-	-	18	
20	56.7	51.2	44.9	-	-	-	-	-	-	-	-	20	
24	43.7	41.6	41.9	39.7	-	-	-	-	-	-	-	24	
28	33.9	33.8	37.0	36.1	-	-	-	-	-	-	-	28	
32	27.2	27.2	30.0	30.0	29.0	27.8	21.9	17.2	-	-	-	32	
36	22.6	22.6	25.0	25.0	25.9	25.3	19.3	17.0	-	-	-	36	
40	18.5	18.5	20.7	20.7	22.4	22.4	16.2	14.5	18.3	-	-	40	
48	13.3	13.3	14.8	14.8	16.1	16.1	11.6	10.6	13.9	12.8	-	48	
56	9.7	9.7	10.8	10.8	11.6	11.6	8.1	7.6	10.2	9.5	12.0	11.2	56
64	7.1	7.1	7.8	7.8	-	-	5.3	5.3	7.2	6.9	8.8	8.3	64
72	-	-	-	-	-	-	3.3	3.3	4.9	4.9	6.2	6.0	72
80	-	-	-	-	-	-	-	-	-	-	4.2	4.2	80

Operation










HAV










Operation










HAV-HY






99,200 lb +  33,100 lb		 16.4 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5				
		 42.3 ft				 126.0 ft								
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		36°		
ft		1,000 lb												ft
10	119.2	105.7	89.2	-	-	-	-	-	-	-	-	-	-	10
12	113.1	101.2	85.9	80.0	-	-	-	-	-	-	-	-	-	12
14	107.3	97.2	82.9	77.5	-	-	-	-	-	-	-	-	-	14
16	102.0	93.4	80.1	75.4	65.7	61.8	-	-	-	-	-	-	-	16
18	97.4	90.0	77.8	73.4	64.4	60.7	-	-	-	-	-	-	-	18
20	93.1	86.8	75.5	71.4	63.1	59.6	-	-	-	-	-	-	-	20
24	85.8	81.2	71.6	68.0	60.2	57.9	-	-	-	-	-	-	-	24
28	79.5	76.4	67.6	65.3	57.2	56.3	74.9	68.0	-	-	-	-	-	28
32	74.6	72.0	63.4	62.4	54.9	54.1	67.0	65.9	62.7	-	-	-	-	32
36	69.8	67.7	59.6	58.7	53.1	52.5	60.8	60.8	58.6	56.5	51.0	-	-	36
40	64.9	63.2	56.0	55.2	-	-	55.1	55.3	54.4	53.1	49.0	48.8	-	40
48	-	-	-	-	-	-	46.6	46.3	45.8	44.8	44.0	43.8	-	48
56	-	-	-	-	-	-	39.6	39.5	39.3	38.4	38.4	38.3	-	56
64	-	-	-	-	-	-	34.4	34.1	34.0	33.3	33.3	33.3	-	64
72	-	-	-	-	-	-	31.4	30.7	29.9	29.2	29.2	29.0	-	72
80	-	-	-	-	-	-	28.7	28.1	26.4	26.4	25.8	25.8	-	80
88	-	-	-	-	-	-	26.3	26.0	24.6	24.6	24.0	24.0	-	88
96	-	-	-	-	-	-	23.3	23.3	23.1	23.1	22.7	22.7	-	96
104	-	-	-	-	-	-	20.2	20.2	20.5	20.5	20.6	20.6	-	104
112	-	-	-	-	-	-	17.5	17.5	17.7	17.7	-	-	-	112
120	-	-	-	-	-	-	15.2	15.2	15.4	15.4	-	-	-	120
128	-	-	-	-	-	-	13.3	13.3	-	-	-	-	-	128

		 181.1 ft				 196.9 ft								
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		36°		
ft		1,000 lb												ft
48	35.0	28.4	-	-	-	-	-	-	-	-	-	-	-	48
56	31.0	27.6	30.2	27.3	29.5	-	24.7	22.3	24.8	-	-	-	-	56
64	27.2	25.1	26.7	24.8	26.4	24.4	22.1	21.0	22.0	21.2	21.9	21.2	-	64
72	23.9	22.1	23.7	21.9	23.4	21.9	19.5	19.0	19.2	19.2	19.2	19.2	-	72
80	20.7	19.2	21.0	19.2	20.8	19.3	17.0	16.9	17.1	17.1	17.1	17.1	-	80
88	18.2	16.9	18.4	17.0	18.5	17.1	14.8	14.7	15.0	14.9	15.2	15.0	-	88
96	16.1	14.9	16.2	15.1	16.3	15.1	12.9	12.8	13.1	13.1	13.2	13.1	-	96
104	14.1	13.2	14.3	13.2	14.3	13.4	11.2	11.2	11.4	11.4	11.6	11.4	-	104
112	12.5	11.6	12.7	11.8	12.7	11.8	9.8	9.8	10.1	9.9	10.1	10.1	-	112
120	11.1	10.3	11.1	10.3	11.4	10.5	8.6	8.6	8.8	8.7	8.8	8.8	-	120
128	9.8	9.0	9.9	9.3	10.0	9.3	7.5	7.5	7.7	7.5	7.7	7.7	-	128
136	8.6	8.0	8.8	8.2	8.8	8.2	6.4	6.4	6.6	6.6	6.6	6.6	-	136
144	7.8	7.1	7.8	7.1	7.8	7.1	5.5	5.5	5.8	5.6	5.8	5.8	-	144
152	6.7	6.3	6.7	6.3	6.9	6.3	4.7	4.7	5.0	5.0	5.0	5.0	-	152
160	5.8	5.5	5.9	5.5	-	-	4.0	4.0	4.2	4.2	4.2	4.2	-	160
168	4.9	4.7	5.0	4.7	-	-	3.4	3.4	3.4	3.4	-	-	-	168
176	4.5	4.0	4.1	4.1	-	-	2.7	2.7	2.7	2.7	-	-	-	176

Operation










HAV-HY






99,200 lb +  33,100 lb		 36.1 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
10		72.7	59.8	-	-	-	-	-	-	-	-	10
12		69.1	57.4	-	-	-	-	-	-	-	-	12
14		65.8	55.3	-	-	-	-	-	-	-	-	14
16		62.8	53.1	-	-	-	-	-	-	-	-	16
18		60.0	51.2	-	-	-	-	-	-	-	-	18
20		57.4	49.3	44.3	-	-	-	-	-	-	-	20
24		52.7	45.9	41.2	37.6	-	-	-	-	-	-	24
28		48.7	42.9	38.7	35.4	-	-	-	-	-	-	28
32		45.2	40.2	36.6	33.6	28.2	26.3	46.1	39.7	-	-	32
36		42.1	37.9	34.7	32.1	27.0	25.4	44.7	38.6	-	-	36
40		39.1	35.7	32.8	30.7	25.8	24.6	43.2	37.6	35.3	-	40
48		34.5	32.3	29.6	28.3	23.3	23.0	40.4	35.7	33.4	28.8	48
56		31.0	29.5	26.5	26.2	21.7	21.7	36.6	33.9	31.4	27.5	56
64		27.6	26.9	24.2	24.2	-	-	32.2	31.8	29.3	26.5	64
72		-	-	-	-	-	-	28.3	28.3	27.2	25.4	72
80		-	-	-	-	-	-	24.9	24.7	24.7	23.0	80
88		-	-	-	-	-	-	22.0	22.0	22.1	20.6	88
96		-	-	-	-	-	-	19.6	19.6	19.8	18.4	96
104		-	-	-	-	-	-	17.6	17.6	17.7	16.5	104
112		-	-	-	-	-	-	16.0	16.0	16.0	14.9	112
120		-	-	-	-	-	-	15.0	15.0	14.5	13.4	120
128		-	-	-	-	-	-	13.9	13.9	13.2	12.6	128
136		-	-	-	-	-	-	12.5	12.5	12.0	12.0	136
144		-	-	-	-	-	-	10.9	10.9	11.1	11.1	144

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
56		25.0	21.4	-	-	-	-	20.5	16.8	-	-	56
64		23.1	21.4	-	-	-	-	19.6	16.8	-	-	64
72		20.8	20.1	19.7	19.7	-	-	18.1	16.8	17.7	-	72
80		18.4	18.4	18.0	17.8	17.2	17.2	16.2	15.5	16.1	15.7	80
88		16.3	16.3	16.2	16.2	15.9	15.9	14.4	14.2	14.4	14.3	88
96		14.5	14.5	14.7	14.6	14.7	14.5	12.6	12.6	12.8	12.8	96
104		12.8	12.8	13.2	13.2	13.4	13.4	11.0	11.0	11.4	11.4	104
112		11.4	11.4	11.8	11.6	12.0	12.0	9.6	9.6	10.1	10.1	112
120		10.1	10.0	10.5	10.3	10.7	10.7	8.3	8.3	8.8	8.8	120
128		8.9	8.8	9.3	9.3	9.4	9.4	7.3	7.3	7.7	7.7	128
136		7.9	7.7	8.2	8.2	8.3	8.3	6.4	6.4	6.6	6.6	136
144		6.9	6.9	7.1	7.1	7.3	7.3	5.5	5.3	5.8	5.8	144
152		6.1	6.1	6.3	6.3	6.5	6.5	4.7	4.6	5.0	5.0	152
160		5.3	5.3	5.5	5.5	5.7	5.7	3.9	3.9	4.2	4.2	160
168		4.6	4.6	4.7	4.7	4.9	4.9	3.3	3.3	3.5	3.5	168
176		4.0	4.0	4.1	4.1	4.1	4.1	2.7	2.7	2.9	2.9	176
184		3.4	3.4	3.5	3.5	-	-	-	-	-	-	184
192		2.8	2.8	-	-	-	-	-	-	-	-	192
200		2.4	2.4	-	-	-	-	-	-	-	-	200

Operation










HAV-HY






99,200 lb +  33,100 lb		 55.8 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
14	44.5	37.4	-	-	-	-	-	-	-	-	-	14	
16	43.0	36.4	-	-	-	-	-	-	-	-	-	16	
18	41.6	35.3	-	-	-	-	-	-	-	-	-	18	
20	40.1	34.2	-	-	-	-	-	-	-	-	-	20	
24	37.4	32.1	-	-	-	-	-	-	-	-	-	24	
28	34.9	30.3	-	-	-	-	-	-	-	-	-	28	
32	32.6	28.5	25.5	-	-	-	-	-	-	-	-	32	
36	30.6	27.0	24.1	21.8	-	-	30.0	24.8	-	-	-	36	
40	28.6	25.6	22.8	20.8	-	-	29.2	24.1	-	-	-	40	
48	25.5	23.3	20.7	19.0	16.3	15.8	27.6	22.9	-	-	-	48	
56	23.0	21.2	18.9	17.5	14.6	14.6	26.0	21.8	20.6	18.4	-	56	
64	20.7	19.3	17.3	16.3	13.4	13.4	24.5	20.7	19.4	17.6	-	64	
72	18.6	17.9	15.7	15.2	12.6	12.6	23.2	19.6	18.5	16.8	15.0	13.9	72
80	16.7	16.7	14.4	14.4	-	-	21.9	18.8	17.7	16.0	14.4	13.4	80
88	-	-	-	-	-	-	20.7	17.9	16.9	15.5	13.7	13.0	88
96	-	-	-	-	-	-	19.0	16.9	16.1	14.9	13.3	12.6	96
104	-	-	-	-	-	-	17.2	15.8	15.3	14.4	12.9	12.4	104
112	-	-	-	-	-	-	15.4	14.5	14.3	13.9	12.6	12.1	112
120	-	-	-	-	-	-	14.0	13.1	13.2	13.2	12.2	11.9	120
128	-	-	-	-	-	-	12.7	11.8	12.1	12.1	11.7	11.6	128
136	-	-	-	-	-	-	11.5	10.8	10.9	10.9	11.0	10.9	136
144	-	-	-	-	-	-	10.2	9.7	9.7	9.7	10.0	10.0	144
152	-	-	-	-	-	-	9.0	9.0	9.0	9.0	-	-	152
160	-	-	-	-	-	-	8.5	8.5	8.3	8.3	-	-	160

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
56	18.6	15.7	-	-	-	-	-	-	-	-	-	56	
64	18.2	15.7	-	-	-	-	15.7	12.3	-	-	-	64	
72	17.6	15.7	-	-	-	-	15.2	12.3	-	-	-	72	
80	16.8	15.4	15.5	14.0	-	-	14.6	12.3	14.2	-	-	80	
88	15.4	14.9	14.4	13.5	12.6	12.0	13.7	12.3	13.1	12.3	-	88	
96	14.1	13.9	13.3	12.9	12.1	11.8	12.2	11.9	12.0	11.7	11.2	11.1	96
104	12.5	12.5	12.4	12.2	11.5	11.3	10.7	10.7	10.9	10.9	10.5	10.5	104
112	11.2	11.2	11.4	11.4	11.0	11.0	9.6	9.4	9.9	9.9	9.9	9.9	112
120	10.0	10.0	10.3	10.3	10.2	10.2	8.3	8.3	8.8	8.8	9.1	9.1	120
128	8.8	8.8	9.3	9.3	9.4	9.4	7.3	7.3	7.8	7.8	8.2	8.2	128
136	7.7	7.7	8.3	8.2	8.6	8.6	6.4	6.2	6.9	6.9	7.2	7.2	136
144	6.9	6.9	7.3	7.3	7.5	7.5	5.3	5.3	6.0	6.0	6.4	6.2	144
152	6.1	6.1	6.5	6.5	6.7	6.7	4.7	4.6	5.2	5.2	5.4	5.4	152
160	5.3	5.3	5.7	5.7	5.9	5.9	3.9	3.9	4.4	4.4	4.7	4.6	160
168	4.6	4.6	5.0	5.0	5.2	5.2	3.3	3.3	3.7	3.7	4.1	3.9	168
176	4.0	4.0	4.3	4.3	4.5	4.5	2.7	2.7	3.2	3.2	3.4	3.2	176
184	3.5	3.5	3.7	3.7	3.8	3.8	-	-	-	-	2.7	2.6	184
192	-	-	3.2	3.2	-	-	-	-	-	-	-	-	192
200	-	-	2.7	2.7	-	-	-	-	-	-	-	-	200

Operation

HAV-HY

99,200 lb +  33,100 lb		 75.5 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
18	27.7	-	-	-	-	-	-	-	-	-	-	18	
20	27.0	23.3	-	-	-	-	-	-	-	-	-	20	
24	25.9	22.2	-	-	-	-	-	-	-	-	-	24	
28	24.5	21.1	-	-	-	-	-	-	-	-	-	28	
32	23.4	20.2	-	-	-	-	-	-	-	-	-	32	
36	22.2	19.3	-	-	-	-	-	-	-	-	-	36	
40	21.0	18.4	17.9	-	-	-	19.5	17.1	-	-	-	40	
48	18.9	16.8	16.2	14.6	-	-	18.5	16.3	-	-	-	48	
56	17.2	15.3	14.8	13.4	-	-	17.7	15.5	-	-	-	56	
64	15.5	14.1	13.7	12.3	10.4	10.3	16.9	14.9	14.3	-	-	64	
72	14.4	13.0	12.6	11.5	9.5	9.5	16.1	14.1	13.5	12.1	-	72	
80	13.1	12.2	11.3	10.9	8.7	8.7	15.3	13.5	12.9	11.6	10.1	9.4	80
88	12.2	11.4	10.4	10.2	8.2	8.2	14.5	12.8	12.2	11.1	9.7	9.2	88
96	11.1	10.6	9.5	9.5	7.8	7.8	13.8	12.3	11.6	10.7	9.2	8.9	96
104	10.1	10.0	8.9	8.9	-	-	13.1	11.8	11.1	10.2	8.9	8.6	104
112	-	-	-	-	-	-	12.5	11.4	10.8	9.9	8.6	8.4	112
120	-	-	-	-	-	-	11.9	10.9	10.3	9.6	8.3	8.1	120
128	-	-	-	-	-	-	11.1	10.4	10.0	9.1	8.0	7.9	128
136	-	-	-	-	-	-	10.2	9.7	9.6	8.9	7.8	7.8	136
144	-	-	-	-	-	-	9.3	9.1	9.1	8.6	7.7	7.7	144
152	-	-	-	-	-	-	8.5	8.5	8.5	8.3	7.5	7.5	152
160	-	-	-	-	-	-	7.7	7.7	7.9	7.9	7.4	7.4	160
168	-	-	-	-	-	-	7.0	7.0	7.2	7.2	-	-	168
176	-	-	-	-	-	-	6.5	6.5	6.5	6.5	-	-	176
184	-	-	-	-	-	-	5.8	5.8	-	-	-	-	184

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
64	12.8	11.0	-	-	-	-	-	-	-	-	-	64	
72	12.4	11.0	-	-	-	-	11.2	8.8	-	-	-	72	
80	12.1	11.0	-	-	-	-	11.0	8.8	-	-	-	80	
88	11.8	10.7	10.5	9.6	-	-	10.7	8.8	-	-	-	88	
96	11.5	10.4	10.2	9.3	-	-	10.4	8.8	9.6	8.7	-	96	
104	11.3	10.2	10.0	9.1	8.6	-	9.8	8.8	9.3	8.4	-	104	
112	10.3	9.7	9.7	8.8	8.4	7.7	9.0	8.8	8.8	8.3	7.9	7.3	112
120	9.5	9.4	9.3	8.5	8.1	7.4	8.0	7.9	8.2	7.9	7.6	7.2	120
128	8.6	8.6	8.6	8.3	7.8	7.3	7.0	6.9	7.4	7.4	7.2	6.9	128
136	7.5	7.5	7.9	7.8	7.6	7.1	6.1	6.1	6.7	6.6	6.7	6.7	136
144	6.6	6.6	7.3	7.1	7.1	7.1	5.3	5.1	6.0	6.0	6.2	6.2	144
152	5.8	5.8	6.5	6.5	6.7	6.5	4.5	4.3	5.2	5.2	5.6	5.4	152
160	5.0	5.0	5.7	5.7	5.9	5.9	3.8	3.7	4.4	4.4	4.9	4.8	160
168	4.4	4.4	5.0	5.0	5.2	5.2	3.2	3.0	3.7	3.7	4.2	4.1	168
176	3.8	3.8	4.3	4.3	4.5	4.5	2.5	2.5	3.2	3.2	3.4	3.4	176
184	3.3	3.3	3.6	3.6	3.8	3.8	-	-	-	-	2.8	2.8	184
192	-	-	3.0	3.0	3.2	3.2	-	-	-	-	-	-	192
200	-	-	2.6	2.6	2.7	2.7	-	-	-	-	-	-	200

Operation

HAV-HY

77,200 lb + 33,100 lb		16.4 ft		19.7 ft		32.2 ft/s		360°		ASME B30.5	
		42.3 ft				126.0 ft					
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft
	0°		18°		36°		0°		18°		
1,000 lb											
10	119.2	105.7	89.2	-	-	-	-	-	-	-	10
12	113.1	101.2	85.9	80.0	-	-	-	-	-	-	12
14	107.3	97.2	82.9	77.5	-	-	-	-	-	-	14
16	102.0	93.4	80.1	75.4	65.7	61.8	-	-	-	-	16
18	97.4	90.0	77.8	73.4	64.4	60.7	-	-	-	-	18
20	93.1	86.8	75.5	71.4	63.1	59.6	-	-	-	-	20
24	85.8	81.2	71.6	68.0	60.2	57.9	-	-	-	-	24
28	79.5	76.4	67.6	65.3	57.2	56.3	74.9	68.0	-	-	28
32	74.6	72.0	63.4	62.4	54.9	54.1	67.0	65.9	62.7	-	32
36	69.8	67.7	59.6	58.7	53.1	52.5	60.8	60.8	58.6	56.5	36
40	64.9	63.2	56.0	55.2	-	-	55.1	55.3	54.4	53.1	40
48	-	-	-	-	-	-	46.6	46.3	45.8	44.8	48
56	-	-	-	-	-	-	39.6	39.5	39.3	38.4	56
64	-	-	-	-	-	-	34.4	34.1	34.0	33.3	64
72	-	-	-	-	-	-	31.4	30.7	29.9	29.2	72
80	-	-	-	-	-	-	26.8	26.8	26.3	26.3	80
88	-	-	-	-	-	-	22.5	22.5	23.1	23.1	88
96	-	-	-	-	-	-	19.1	19.1	19.5	19.5	96
104	-	-	-	-	-	-	16.2	16.2	16.6	16.6	104
112	-	-	-	-	-	-	14.3	14.3	14.3	14.3	112
120	-	-	-	-	-	-	13.2	13.2	13.2	13.2	120
128	-	-	-	-	-	-	11.9	11.9	-	-	128

		181.1 ft				196.9 ft					
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft
	0°		18°		36°		0°		18°		
1,000 lb											
48	35.0	28.4	-	-	-	-	-	-	-	-	48
56	31.0	27.6	30.2	27.3	29.5	-	24.7	22.3	24.8	-	56
64	27.2	25.1	26.7	24.8	26.4	24.4	22.1	21.0	22.0	21.2	64
72	23.9	22.1	23.7	21.9	23.4	21.9	19.5	19.0	19.2	19.2	72
80	20.7	19.2	21.0	19.2	20.8	19.3	17.0	16.9	17.1	17.1	80
88	18.2	16.9	18.4	17.0	18.5	17.1	14.8	14.7	15.0	14.9	88
96	16.1	14.9	16.2	15.1	16.3	15.1	12.9	12.8	13.1	13.1	96
104	14.1	13.2	14.3	13.2	14.3	13.4	11.2	11.2	11.4	11.4	104
112	12.2	11.6	12.7	11.8	12.7	11.8	9.8	9.8	10.1	9.9	112
120	10.1	10.1	10.6	10.3	10.8	10.5	8.6	8.6	8.8	8.7	120
128	8.7	8.4	8.8	8.8	9.0	9.0	7.5	7.5	7.7	7.5	128
136	7.6	7.2	7.2	7.2	7.4	7.4	6.4	6.4	6.6	6.6	136
144	6.4	6.4	6.4	6.4	6.4	6.4	5.3	5.3	5.6	5.6	144
152	5.1	5.1	5.4	5.4	5.6	5.6	4.1	4.1	4.5	4.5	152
160	4.2	4.2	4.4	4.4	-	-	3.2	3.2	3.4	3.4	160
168	3.3	3.3	3.5	3.5	-	-	-	-	-	-	168
176	2.5	2.5	2.6	2.6	-	-	-	-	-	-	176

Operation










HAV-HY






77,200 lb + 33,100 lb		36.1 ft		19.7 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft		
	0°		18°		36°		0°		18°			36°	
1,000 lb													
10	72.7	59.8	-	-	-	-	-	-	-	-	10		
12	69.1	57.4	-	-	-	-	-	-	-	-	12		
14	65.8	55.3	-	-	-	-	-	-	-	-	14		
16	62.8	53.1	-	-	-	-	-	-	-	-	16		
18	60.0	51.2	-	-	-	-	-	-	-	-	18		
20	57.4	49.3	44.3	-	-	-	-	-	-	-	20		
24	52.7	45.9	41.2	37.6	-	-	-	-	-	-	24		
28	48.7	42.9	38.7	35.4	-	-	-	-	-	-	28		
32	45.2	40.2	36.6	33.6	28.2	26.3	46.1	39.7	-	-	32		
36	42.1	37.9	34.7	32.1	27.0	25.4	44.7	38.6	-	-	36		
40	39.1	35.7	32.8	30.7	25.8	24.6	43.2	37.6	35.3	-	40		
48	34.5	32.3	29.6	28.3	23.3	23.0	40.4	35.7	33.4	28.8	48		
56	31.0	29.5	26.5	26.2	21.7	21.7	36.6	33.9	31.4	27.5	24.8	23.0	56
64	27.6	26.9	24.2	24.2	-	-	32.2	31.8	29.3	26.5	23.6	22.4	64
72	-	-	-	-	-	-	28.3	28.3	27.2	25.4	22.5	21.6	72
80	-	-	-	-	-	-	24.9	24.7	24.7	23.0	21.4	21.0	80
88	-	-	-	-	-	-	21.8	21.8	22.1	20.6	20.3	20.1	88
96	-	-	-	-	-	-	18.8	18.8	19.6	18.4	18.5	18.5	96
104	-	-	-	-	-	-	17.1	17.1	17.0	16.5	16.5	16.5	104
112	-	-	-	-	-	-	14.9	14.9	14.4	14.4	14.7	14.7	112
120	-	-	-	-	-	-	12.8	12.8	13.1	13.1	12.9	12.9	120
128	-	-	-	-	-	-	11.0	11.0	11.6	11.6	10.7	10.7	128
136	-	-	-	-	-	-	9.7	9.7	9.8	9.8	-	-	136
144	-	-	-	-	-	-	9.1	9.1	8.6	8.4	-	-	144

		181.1 ft				196.9 ft							
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft		
	0°		18°		36°		0°		18°			36°	
1,000 lb													
56	25.0	21.4	-	-	-	-	20.5	16.8	-	-	-	56	
64	23.1	21.4	-	-	-	-	19.6	16.8	-	-	-	64	
72	20.8	20.1	19.7	19.7	-	-	18.1	16.8	17.7	-	-	72	
80	18.4	18.4	18.0	17.8	17.2	17.2	16.2	15.5	16.1	15.7	15.4	15.4	80
88	16.3	16.3	16.2	16.2	15.9	15.9	14.4	14.2	14.4	14.3	14.2	14.1	88
96	14.5	14.5	14.7	14.6	14.7	14.5	12.6	12.6	12.8	12.8	13.0	12.8	96
104	12.8	12.8	13.2	13.2	13.4	13.4	11.0	11.0	11.4	11.4	11.6	11.6	104
112	11.4	11.4	11.8	11.6	12.0	12.0	9.6	9.6	10.1	10.1	10.3	10.3	112
120	10.1	10.0	10.5	10.3	10.7	10.7	8.3	8.3	8.8	8.8	9.0	9.0	120
128	8.9	8.8	9.3	9.3	9.4	9.4	7.3	7.3	7.7	7.7	7.9	7.9	128
136	7.6	7.6	8.2	8.2	8.3	8.3	6.4	6.4	6.6	6.6	6.9	6.9	136
144	6.2	6.2	6.9	6.9	7.3	7.3	5.5	5.3	5.8	5.8	6.0	6.0	144
152	5.4	5.2	5.6	5.6	6.0	6.0	4.7	4.5	5.0	5.0	5.2	5.2	152
160	4.6	4.6	4.8	4.8	4.9	4.9	3.6	3.6	4.2	4.2	4.4	4.4	160
168	3.8	3.8	4.0	4.0	4.2	4.2	-	-	3.3	3.3	3.5	3.5	168
176	3.0	3.0	3.2	3.2	3.4	3.4	-	-	2.3	2.3	2.6	2.6	176

Operation










HAV-HY






77,200 lb +  33,100 lb		 55.8 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
14		44.5	37.4	-	-	-	-	-	-	-	-	14
16		43.0	36.4	-	-	-	-	-	-	-	-	16
18		41.6	35.3	-	-	-	-	-	-	-	-	18
20		40.1	34.2	-	-	-	-	-	-	-	-	20
24		37.4	32.1	-	-	-	-	-	-	-	-	24
28		34.9	30.3	-	-	-	-	-	-	-	-	28
32		32.6	28.5	25.5	-	-	-	-	-	-	-	32
36		30.6	27.0	24.1	21.8	-	-	30.0	24.8	-	-	36
40		28.6	25.6	22.8	20.8	-	-	29.2	24.1	-	-	40
48		25.5	23.3	20.7	19.0	16.3	15.8	27.6	22.9	-	-	48
56		23.0	21.2	18.9	17.5	14.6	14.6	26.0	21.8	20.6	18.4	56
64		20.7	19.3	17.3	16.3	13.4	13.4	24.5	20.7	19.4	17.6	64
72		18.6	17.9	15.7	15.2	12.6	12.6	23.2	19.6	18.5	16.8	72
80		16.7	16.7	14.4	14.4	-	-	21.9	18.8	17.7	16.0	80
88		-	-	-	-	-	-	20.7	17.9	16.9	15.5	88
96		-	-	-	-	-	-	19.0	16.9	16.1	14.9	96
104		-	-	-	-	-	-	16.8	15.8	15.3	14.4	104
112		-	-	-	-	-	-	14.4	14.4	14.3	13.9	112
120		-	-	-	-	-	-	12.6	12.6	13.1	13.1	120
128		-	-	-	-	-	-	10.8	10.8	11.6	11.7	128
136		-	-	-	-	-	-	10.0	10.0	10.3	10.3	136
144		-	-	-	-	-	-	8.9	8.9	8.8	8.8	144
152		-	-	-	-	-	-	7.8	7.8	8.4	8.4	152
160		-	-	-	-	-	-	6.7	6.7	7.2	7.2	160

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
56		18.6	15.7	-	-	-	-	-	-	-	-	56
64		18.2	15.7	-	-	-	-	15.7	12.3	-	-	64
72		17.6	15.7	-	-	-	-	15.2	12.3	-	-	72
80		16.8	15.4	15.5	14.0	-	-	14.6	12.3	14.2	-	80
88		15.4	14.9	14.4	13.5	12.6	12.0	13.7	12.3	13.1	12.3	88
96		14.1	13.9	13.3	12.9	12.1	11.8	12.2	11.9	12.0	11.7	96
104		12.5	12.5	12.4	12.2	11.5	11.3	10.7	10.7	10.9	10.9	104
112		11.2	11.2	11.4	11.4	11.0	11.0	9.6	9.4	9.9	9.9	112
120		10.0	10.0	10.3	10.3	10.2	10.2	8.3	8.3	8.8	8.8	120
128		8.8	8.8	9.3	9.3	9.4	9.4	7.3	7.3	7.8	7.8	128
136		7.7	7.7	8.3	8.2	8.6	8.6	6.4	6.2	6.9	6.9	136
144		6.9	6.9	7.3	7.3	7.5	7.5	5.3	5.3	6.0	6.0	144
152		5.8	5.8	6.5	6.5	6.7	6.7	4.7	4.6	5.2	5.2	152
160		4.7	4.7	5.6	5.6	5.9	5.9	3.9	3.9	4.4	4.4	160
168		3.9	3.9	4.6	4.6	5.0	5.0	3.2	3.2	3.7	3.7	168
176		3.4	3.4	3.7	3.7	4.1	4.1	2.5	2.5	3.2	3.2	176
184		-	-	3.1	3.1	3.2	3.2	-	-	-	-	184

Operation










HAV-HY






77,200 lb +  33,100 lb		 75.5 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
18	27.7	-	-	-	-	-	-	-	-	-	-	18	
20	27.0	23.3	-	-	-	-	-	-	-	-	-	20	
24	25.9	22.2	-	-	-	-	-	-	-	-	-	24	
28	24.5	21.1	-	-	-	-	-	-	-	-	-	28	
32	23.4	20.2	-	-	-	-	-	-	-	-	-	32	
36	22.2	19.3	-	-	-	-	-	-	-	-	-	36	
40	21.0	18.4	17.9	-	-	-	19.5	17.1	-	-	-	40	
48	18.9	16.8	16.2	14.6	-	-	18.5	16.3	-	-	-	48	
56	17.2	15.3	14.8	13.4	-	-	17.7	15.5	-	-	-	56	
64	15.5	14.1	13.7	12.3	10.4	10.3	16.9	14.9	14.3	-	-	64	
72	14.4	13.0	12.6	11.5	9.5	9.5	16.1	14.1	13.5	12.1	-	72	
80	13.1	12.2	11.3	10.9	8.7	8.7	15.3	13.5	12.9	11.6	10.1	9.4	80
88	12.2	11.4	10.4	10.2	8.2	8.2	14.5	12.8	12.2	11.1	9.7	9.2	88
96	11.1	10.6	9.5	9.5	7.8	7.8	13.8	12.3	11.6	10.7	9.2	8.9	96
104	10.1	10.0	8.9	8.9	-	-	13.1	11.8	11.1	10.2	8.9	8.6	104
112	-	-	-	-	-	-	12.5	11.4	10.8	9.9	8.6	8.4	112
120	-	-	-	-	-	-	11.9	10.9	10.3	9.6	8.3	8.1	120
128	-	-	-	-	-	-	10.9	10.4	10.0	9.1	8.0	7.9	128
136	-	-	-	-	-	-	9.8	9.6	9.6	8.9	7.8	7.8	136
144	-	-	-	-	-	-	8.2	8.2	9.1	8.6	7.7	7.7	144
152	-	-	-	-	-	-	7.2	7.2	8.2	8.0	7.5	7.5	152
160	-	-	-	-	-	-	6.8	6.8	6.9	6.9	7.2	7.2	160
168	-	-	-	-	-	-	6.0	6.0	6.0	6.0	-	-	168
176	-	-	-	-	-	-	5.2	5.2	5.6	5.6	-	-	176
184	-	-	-	-	-	-	4.5	4.5	-	-	-	-	184

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
64	12.8	11.0	-	-	-	-	-	-	-	-	-	64	
72	12.4	11.0	-	-	-	-	11.2	8.8	-	-	-	72	
80	12.1	11.0	-	-	-	-	11.0	8.8	-	-	-	80	
88	11.8	10.7	10.5	9.6	-	-	10.7	8.8	-	-	-	88	
96	11.5	10.4	10.2	9.3	-	-	10.4	8.8	9.6	8.7	-	96	
104	11.3	10.2	10.0	9.1	8.6	-	9.8	8.8	9.3	8.4	-	104	
112	10.3	9.7	9.7	8.8	8.4	7.7	9.0	8.8	8.8	8.3	7.9	7.3	112
120	9.5	9.4	9.3	8.5	8.1	7.4	8.0	7.9	8.2	7.9	7.6	7.2	120
128	8.6	8.6	8.6	8.3	7.8	7.3	7.0	6.9	7.4	7.4	7.2	6.9	128
136	7.5	7.5	7.9	7.8	7.6	7.1	6.1	6.1	6.7	6.6	6.7	6.7	136
144	6.6	6.6	7.3	7.1	7.1	7.1	5.3	5.1	6.0	6.0	6.2	6.2	144
152	5.8	5.8	6.5	6.5	6.7	6.5	4.5	4.3	5.2	5.2	5.6	5.4	152
160	5.0	5.0	5.7	5.7	5.9	5.9	3.8	3.7	4.4	4.4	4.9	4.8	160
168	3.9	3.9	4.9	4.9	5.2	5.2	3.2	3.0	3.7	3.7	4.2	4.1	168
176	3.0	3.0	4.1	4.1	4.5	4.5	2.5	2.5	3.2	3.2	3.4	3.4	176
184	-	-	3.3	3.3	3.8	3.8	-	-	-	-	2.8	2.8	184

Operation










HAV-HY






55,100 lb +  33,100 lb		 16.4 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
10		119.2	105.7	89.2	-	-	-	-	-	-	-	10
12		113.1	101.2	85.9	80.0	-	-	-	-	-	-	12
14		107.3	97.2	82.9	77.5	-	-	-	-	-	-	14
16		102.0	93.4	80.1	75.4	65.7	61.8	-	-	-	-	16
18		97.4	90.0	77.8	73.4	64.4	60.7	-	-	-	-	18
20		93.1	86.8	75.5	71.4	63.1	59.6	-	-	-	-	20
24		85.8	81.2	71.6	68.0	60.2	57.9	-	-	-	-	24
28		79.5	76.4	67.6	65.3	57.2	56.3	74.9	68.0	-	-	28
32		74.6	72.0	63.4	62.4	54.9	54.1	67.0	65.9	62.7	-	32
36		69.8	67.7	59.6	58.7	53.1	52.5	60.8	60.8	58.6	56.5	36
40		64.9	63.2	56.0	55.2	-	-	55.1	55.3	54.4	53.1	40
48		-	-	-	-	-	-	46.6	45.9	45.8	44.8	48
56		-	-	-	-	-	-	38.2	37.6	38.7	38.3	56
64		-	-	-	-	-	-	32.1	31.9	31.5	31.3	64
72		-	-	-	-	-	-	25.9	25.9	26.8	26.8	72
80		-	-	-	-	-	-	21.4	21.4	22.1	22.1	80
88		-	-	-	-	-	-	18.6	18.6	18.2	18.2	88
96		-	-	-	-	-	-	16.5	16.5	16.4	16.4	96
104		-	-	-	-	-	-	14.0	14.0	14.2	14.2	104
112		-	-	-	-	-	-	11.8	11.8	12.0	12.0	112
120		-	-	-	-	-	-	10.0	10.0	10.2	10.2	120
128		-	-	-	-	-	-	9.0	9.0	-	-	128

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
48		35.0	28.4	-	-	-	-	-	-	-	-	48
56		31.0	27.6	30.2	27.3	29.5	-	24.7	22.3	24.8	-	56
64		27.2	25.1	26.7	24.8	26.4	24.4	22.1	21.0	22.0	21.2	64
72		23.9	22.1	23.7	21.9	23.4	21.9	19.5	19.0	19.2	19.2	72
80		19.7	19.2	20.5	19.2	20.7	19.3	17.0	16.9	17.1	17.1	80
88		16.1	16.1	16.8	16.6	17.3	17.0	14.8	14.7	15.0	14.9	88
96		13.7	13.0	13.7	13.7	14.1	14.1	12.6	12.6	13.1	13.1	96
104		11.3	11.2	11.6	11.4	11.6	11.6	10.4	10.4	10.9	10.9	104
112		9.4	9.4	9.8	9.8	10.0	10.0	8.3	8.3	8.7	8.7	112
120		7.6	7.6	8.0	8.0	8.2	8.2	6.5	6.5	6.9	6.9	120
128		6.1	6.1	6.4	6.4	6.6	6.6	5.0	5.0	5.4	5.4	128
136		4.7	4.7	4.9	4.9	5.2	5.2	3.6	3.6	4.0	4.0	136
144		3.6	3.6	3.8	3.8	4.0	4.0	2.5	2.5	2.7	2.7	144

Operation










HAV-HY






55,100 lb +  33,100 lb		 36.1 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
10		72.7	59.8	-	-	-	-	-	-	-	-	10
12		69.1	57.4	-	-	-	-	-	-	-	-	12
14		65.8	55.3	-	-	-	-	-	-	-	-	14
16		62.8	53.1	-	-	-	-	-	-	-	-	16
18		60.0	51.2	-	-	-	-	-	-	-	-	18
20		57.4	49.3	44.3	-	-	-	-	-	-	-	20
24		52.7	45.9	41.2	37.6	-	-	-	-	-	-	24
28		48.7	42.9	38.7	35.4	-	-	-	-	-	-	28
32		45.2	40.2	36.6	33.6	28.2	26.3	46.1	39.7	-	-	32
36		42.1	37.9	34.7	32.1	27.0	25.4	44.7	38.6	-	-	36
40		39.1	35.7	32.8	30.7	25.8	24.6	43.2	37.6	35.3	-	40
48		34.5	32.3	29.6	28.3	23.3	23.0	40.4	35.7	33.4	28.8	48
56		31.0	29.5	26.5	26.2	21.7	21.7	36.6	33.9	31.4	27.5	56
64		27.6	26.9	24.2	24.2	-	-	31.3	30.6	29.3	26.5	64
72		-	-	-	-	-	-	25.9	25.9	27.2	25.4	72
80		-	-	-	-	-	-	21.6	21.6	22.9	22.5	80
88		-	-	-	-	-	-	18.8	18.8	18.9	18.9	88
96		-	-	-	-	-	-	15.7	15.7	15.8	15.8	96
104		-	-	-	-	-	-	13.6	13.6	14.1	14.1	104
112		-	-	-	-	-	-	12.3	12.3	12.3	11.8	112
120		-	-	-	-	-	-	10.9	10.9	10.6	10.4	120
128		-	-	-	-	-	-	9.3	9.3	9.5	9.5	128
136		-	-	-	-	-	-	8.0	8.0	8.2	8.2	136
144		-	-	-	-	-	-	6.9	6.9	7.1	7.1	144

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
56		25.0	21.4	-	-	-	-	20.5	16.8	-	-	56
64		23.1	21.4	-	-	-	-	19.6	16.8	-	-	64
72		20.8	20.1	19.7	19.7	-	-	18.1	16.8	17.7	-	72
80		18.4	18.4	18.0	17.8	17.2	17.2	16.2	15.5	16.1	15.7	80
88		16.3	16.3	16.2	16.2	15.9	15.9	14.4	14.2	14.4	14.3	88
96		13.8	13.8	14.7	14.6	14.7	14.5	12.6	12.6	12.8	12.8	96
104		11.3	11.3	12.6	12.6	13.4	13.4	10.8	10.8	11.4	11.4	104
112		9.6	9.6	10.3	10.3	11.3	11.3	8.9	8.9	10.0	10.0	112
120		8.2	8.2	8.8	8.8	9.3	9.3	7.1	7.1	8.2	8.2	120
128		6.7	6.7	7.5	7.5	7.9	7.9	5.6	5.6	6.6	6.6	128
136		5.4	5.4	6.0	6.0	6.7	6.7	4.3	4.3	5.2	5.2	136
144		4.0	4.0	4.7	4.7	5.4	5.4	3.1	3.1	3.8	3.8	144
152		3.2	3.2	3.6	3.6	4.0	4.0	-	-	-	-	152
160		-	-	2.7	2.7	3.0	3.0	-	-	-	-	160

Operation














HAV-HY










55,100 lb +  33,100 lb		 55.8 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
14		44.5	37.4	-	-	-	-	-	-	-	-	14
16		43.0	36.4	-	-	-	-	-	-	-	-	16
18		41.6	35.3	-	-	-	-	-	-	-	-	18
20		40.1	34.2	-	-	-	-	-	-	-	-	20
24		37.4	32.1	-	-	-	-	-	-	-	-	24
28		34.9	30.3	-	-	-	-	-	-	-	-	28
32		32.6	28.5	25.5	-	-	-	-	-	-	-	32
36		30.6	27.0	24.1	21.8	-	-	30.0	24.8	-	-	36
40		28.6	25.6	22.8	20.8	-	-	29.2	24.1	-	-	40
48		25.5	23.3	20.7	19.0	16.3	15.8	27.6	22.9	-	-	48
56		23.0	21.2	18.9	17.5	14.6	14.6	26.0	21.8	20.6	18.4	56
64		20.7	19.3	17.3	16.3	13.4	13.4	24.5	20.7	19.4	17.6	64
72		18.6	17.9	15.7	15.2	12.6	12.6	23.2	19.6	18.5	16.8	72
80		16.7	16.7	14.4	14.4	-	-	21.6	18.8	17.7	16.0	80
88		-	-	-	-	-	-	18.4	17.8	16.9	15.5	88
96		-	-	-	-	-	-	15.7	15.7	16.1	14.9	96
104		-	-	-	-	-	-	13.4	13.4	14.5	14.4	104
112		-	-	-	-	-	-	12.0	12.0	12.4	12.4	112
120		-	-	-	-	-	-	10.2	10.2	10.5	10.5	120
128		-	-	-	-	-	-	8.9	8.9	9.6	9.6	128
136		-	-	-	-	-	-	8.1	8.1	8.2	8.2	136
144		-	-	-	-	-	-	7.3	7.3	7.3	7.3	144
152		-	-	-	-	-	-	6.5	6.5	6.7	6.7	152
160		-	-	-	-	-	-	5.5	5.5	5.8	5.8	160

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
56		18.6	15.7	-	-	-	-	-	-	-	-	56
64		18.2	15.7	-	-	-	-	15.7	12.3	-	-	64
72		17.6	15.7	-	-	-	-	15.2	12.3	-	-	72
80		16.8	15.4	15.5	14.0	-	-	14.6	12.3	14.2	-	80
88		15.4	14.9	14.4	13.5	12.6	12.0	13.7	12.3	13.1	12.3	88
96		13.8	13.7	13.3	12.9	12.1	11.8	12.2	11.9	12.0	11.7	96
104		11.7	11.7	12.4	12.2	11.5	11.3	10.7	10.7	10.9	10.9	104
112		9.8	9.8	11.4	11.4	11.0	11.0	8.9	8.9	9.9	9.9	112
120		8.2	8.2	9.8	9.8	10.2	10.2	7.4	7.4	8.8	8.8	120
128		7.3	7.3	8.1	8.1	9.1	9.1	6.1	6.1	7.6	7.6	128
136		6.0	6.0	6.8	6.8	7.6	7.6	4.7	4.7	6.3	6.3	136
144		4.9	4.9	6.0	6.0	6.2	6.2	3.6	3.6	4.9	4.9	144
152		3.8	3.8	4.7	4.7	5.4	5.4	-	-	3.8	3.8	152
160		2.8	2.8	3.7	3.7	4.3	4.3	-	-	2.8	2.8	160
168		-	-	-	-	3.3	3.3	-	-	-	-	168
176		-	-	-	-	2.3	2.3	-	-	-	-	176

Operation

HAV-HY

55,100 lb +  33,100 lb		 75.5 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5	
		 42.3 ft				 126.0 ft					
 ft	 0.3° 1°		 0.3° 1°		 0.3° 1°		 0.3° 1°		 0.3° 1°		 ft
	0°		18°		36°		0°		18°		
1,000 lb											
18	27.7	-	-	-	-	-	-	-	-	-	18
20	27.0	23.3	-	-	-	-	-	-	-	-	20
24	25.9	22.2	-	-	-	-	-	-	-	-	24
28	24.5	21.1	-	-	-	-	-	-	-	-	28
32	23.4	20.2	-	-	-	-	-	-	-	-	32
36	22.2	19.3	-	-	-	-	-	-	-	-	36
40	21.0	18.4	17.9	-	-	-	19.5	17.1	-	-	40
48	18.9	16.8	16.2	14.6	-	-	18.5	16.3	-	-	48
56	17.2	15.3	14.8	13.4	-	-	17.7	15.5	-	-	56
64	15.5	14.1	13.7	12.3	10.4	10.3	16.9	14.9	14.3	-	64
72	14.4	13.0	12.6	11.5	9.5	9.5	16.1	14.1	13.5	12.1	72
80	13.1	12.2	11.3	10.9	8.7	8.7	15.3	13.5	12.9	11.6	80
88	12.2	11.4	10.4	10.2	8.2	8.2	14.5	12.8	12.2	11.1	88
96	11.1	10.6	9.5	9.5	7.8	7.8	13.8	12.3	11.6	10.7	96
104	10.1	10.0	8.9	8.9	-	-	13.1	11.8	11.1	10.2	104
112	-	-	-	-	-	-	11.4	11.4	10.8	9.9	112
120	-	-	-	-	-	-	9.7	9.7	10.3	9.6	120
128	-	-	-	-	-	-	8.8	8.8	9.6	9.1	128
136	-	-	-	-	-	-	7.6	7.6	8.1	8.1	136
144	-	-	-	-	-	-	6.6	6.6	7.3	7.3	144
152	-	-	-	-	-	-	6.0	6.0	6.4	6.4	152
160	-	-	-	-	-	-	5.4	5.4	5.6	5.6	160
168	-	-	-	-	-	-	4.9	4.9	4.9	4.9	168
176	-	-	-	-	-	-	4.1	4.1	4.5	4.5	176
184	-	-	-	-	-	-	3.5	3.5	-	-	184

		 181.1 ft				 196.9 ft					
 ft	 0.3° 1°		 0.3° 1°		 0.3° 1°		 0.3° 1°		 0.3° 1°		 ft
	0°		18°		36°		0°		18°		
1,000 lb											
64	12.8	11.0	-	-	-	-	-	-	-	-	64
72	12.4	11.0	-	-	-	-	11.2	8.8	-	-	72
80	12.1	11.0	-	-	-	-	11.0	8.8	-	-	80
88	11.8	10.7	10.5	9.6	-	-	10.7	8.8	-	-	88
96	11.5	10.4	10.2	9.3	-	-	10.4	8.8	9.6	8.7	96
104	11.1	10.2	10.0	9.1	8.6	-	9.8	8.8	9.3	8.4	104
112	9.2	9.2	9.7	8.8	8.4	7.7	8.5	8.5	8.8	8.3	112
120	7.7	7.7	9.3	8.5	8.1	7.4	6.9	6.9	8.2	7.9	120
128	6.7	6.7	8.3	8.0	7.8	7.3	5.5	5.5	7.4	7.4	128
136	5.8	5.8	6.9	6.9	7.6	7.1	4.3	4.3	6.3	6.3	136
144	4.7	4.7	5.8	5.8	7.1	7.1	3.3	3.3	5.1	5.1	144
152	3.6	3.6	5.0	5.0	6.0	6.0	-	-	4.0	4.0	152
160	2.8	2.8	4.3	4.3	4.7	4.7	-	-	3.1	3.1	160
168	-	-	3.3	3.3	4.0	4.0	-	-	-	-	168
176	-	-	2.3	2.3	3.2	3.2	-	-	-	-	176

Operation










HAV-HY






33,100 lb + 33,100 lb		16.4 ft		19.7 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
ft	0,3°		1°		0,3°		1°		0,3°		1°		
	0°		18°		36°		0°		18°		36°		
1,000 lb													
10	119.2	105.7	89.2	-	-	-	-	-	-	-	-	10	
12	113.1	101.2	85.9	80.0	-	-	-	-	-	-	-	12	
14	107.3	97.2	82.9	77.5	-	-	-	-	-	-	-	14	
16	102.0	93.4	80.1	75.4	65.7	61.8	-	-	-	-	-	16	
18	97.4	90.0	77.8	73.4	64.4	60.7	-	-	-	-	-	18	
20	93.1	86.8	75.5	71.4	63.1	59.6	-	-	-	-	-	20	
24	85.8	81.2	71.6	68.0	60.2	57.9	-	-	-	-	-	24	
28	79.5	76.4	67.6	65.3	57.2	56.3	74.9	67.2	-	-	-	28	
32	74.6	72.0	63.4	62.4	54.9	54.1	66.7	60.5	62.7	-	-	32	
36	67.2	66.0	59.6	58.7	53.1	52.5	58.5	53.5	58.0	54.2	51.0	36	
40	59.1	59.1	55.6	54.8	-	-	51.3	47.4	52.8	48.3	49.0	48.4	40
48	-	-	-	-	-	-	41.6	38.8	41.4	38.4	42.3	39.9	48
56	-	-	-	-	-	-	32.5	31.6	32.7	32.5	33.1	32.1	56
64	-	-	-	-	-	-	25.7	25.7	26.3	26.2	26.8	26.8	64
72	-	-	-	-	-	-	21.9	21.9	22.3	22.1	22.1	22.1	72
80	-	-	-	-	-	-	17.8	17.8	18.4	18.4	18.9	18.9	80
88	-	-	-	-	-	-	15.1	15.1	15.2	15.2	15.5	15.5	88
96	-	-	-	-	-	-	12.6	12.6	12.9	12.9	13.3	13.3	96
104	-	-	-	-	-	-	10.4	10.4	10.8	10.8	10.9	10.9	104
112	-	-	-	-	-	-	8.7	8.7	8.9	8.9	-	-	112
120	-	-	-	-	-	-	7.2	7.2	7.4	7.4	-	-	120
128	-	-	-	-	-	-	5.9	5.9	-	-	-	-	128

		181.1 ft				196.9 ft							
ft	0,3°		1°		0,3°		1°		0,3°		1°		
	0°		18°		36°		0°		18°		36°		
1,000 lb													
48	34.2	28.4	-	-	-	-	-	-	-	-	-	48	
56	27.7	25.9	28.9	26.5	29.1	24.0	24.7	22.3	24.8	-	-	56	
64	23.0	21.3	23.3	22.1	24.2	23.0	21.2	20.1	22.0	20.9	21.9	21.2	64
72	19.0	18.4	18.8	18.6	19.7	19.0	17.1	16.6	18.0	17.5	18.8	18.1	72
80	15.3	15.1	16.2	16.0	16.3	16.3	13.6	13.5	14.5	14.3	15.2	15.0	80
88	12.1	12.1	12.9	12.9	13.3	13.3	10.8	10.8	11.7	11.7	12.3	12.3	88
96	9.6	9.6	10.2	10.2	10.7	10.7	8.4	8.4	9.1	9.1	9.6	9.6	96
104	7.3	7.3	8.0	8.0	8.4	8.4	6.4	6.4	6.9	6.9	7.3	7.3	104
112	5.6	5.6	6.1	6.1	6.5	6.5	4.5	4.5	5.0	5.0	5.4	5.4	112
120	4.1	4.1	4.5	4.5	4.8	4.8	3.0	3.0	3.6	3.6	3.9	3.9	120
128	2.9	2.9	3.2	3.2	3.4	3.4	-	-	-	-	-	-	128

Operation










HAV-HY






33,100 lb +  33,100 lb		 36.1 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
10		72.7	59.8	-	-	-	-	-	-	-	-	10
12		69.1	57.4	-	-	-	-	-	-	-	-	12
14		65.8	55.3	-	-	-	-	-	-	-	-	14
16		62.8	53.1	-	-	-	-	-	-	-	-	16
18		60.0	51.2	-	-	-	-	-	-	-	-	18
20		57.4	49.3	44.3	-	-	-	-	-	-	-	20
24		52.7	45.9	41.2	37.6	-	-	-	-	-	-	24
28		48.7	42.9	38.7	35.4	-	-	-	-	-	-	28
32		45.2	40.2	36.6	33.6	28.2	26.3	46.1	39.7	-	-	32
36		42.1	37.9	34.7	32.1	27.0	25.4	44.7	38.6	-	-	36
40		39.1	35.7	32.8	30.7	25.8	24.6	43.2	37.6	35.3	-	40
48		34.5	32.3	29.6	28.3	23.3	23.0	39.1	34.8	33.4	28.8	48
56		31.0	29.5	26.5	26.2	21.7	21.7	31.8	30.0	31.4	27.5	56
64		27.6	26.9	24.2	24.2	-	-	26.1	25.7	27.3	25.7	64
72		-	-	-	-	-	-	21.3	21.3	22.3	21.9	72
80		-	-	-	-	-	-	18.0	18.0	18.6	18.3	80
88		-	-	-	-	-	-	15.5	15.5	16.0	15.3	88
96		-	-	-	-	-	-	12.9	12.9	13.3	13.3	96
104		-	-	-	-	-	-	11.2	11.2	11.5	11.5	104
112		-	-	-	-	-	-	9.4	9.4	9.6	9.6	112
120		-	-	-	-	-	-	7.8	7.8	8.4	8.4	120
128		-	-	-	-	-	-	6.6	6.6	6.9	6.9	128
136		-	-	-	-	-	-	5.5	5.5	5.8	5.8	136
144		-	-	-	-	-	-	4.5	4.5	4.7	4.7	144

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
56		25.0	21.4	-	-	-	-	20.5	16.8	-	-	56
64		22.1	20.4	-	-	-	-	19.6	16.8	-	-	64
72		18.2	17.3	19.7	19.0	-	-	17.0	16.3	17.7	-	72
80		15.4	15.2	16.4	15.9	17.1	17.0	13.6	13.5	15.6	15.2	80
88		12.4	12.4	13.7	13.6	14.9	14.5	10.8	10.8	12.5	12.5	88
96		10.0	10.0	11.5	11.5	12.4	12.4	8.4	8.4	10.0	10.0	96
104		7.9	7.9	9.3	9.3	10.4	10.4	6.4	6.4	7.8	7.8	104
112		6.3	6.3	7.4	7.4	8.3	8.3	4.8	4.8	6.1	6.1	112
120		4.8	4.8	5.8	5.8	6.5	6.5	3.4	3.4	4.5	4.5	120
128		3.5	3.5	4.3	4.3	5.0	5.0	-	-	3.3	3.3	128
136		-	-	3.1	3.1	3.6	3.6	-	-	-	-	136
144		-	-	-	-	2.5	2.5	-	-	-	-	144

Operation










HAV-HY






33,100 lb +  33,100 lb		 55.8 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
14		44.5	37.4	-	-	-	-	-	-	-	-	14
16		43.0	36.4	-	-	-	-	-	-	-	-	16
18		41.6	35.3	-	-	-	-	-	-	-	-	18
20		40.1	34.2	-	-	-	-	-	-	-	-	20
24		37.4	32.1	-	-	-	-	-	-	-	-	24
28		34.9	30.3	-	-	-	-	-	-	-	-	28
32		32.6	28.5	25.5	-	-	-	-	-	-	-	32
36		30.6	27.0	24.1	21.8	-	-	30.0	24.8	-	-	36
40		28.6	25.6	22.8	20.8	-	-	29.2	24.1	-	-	40
48		25.5	23.3	20.7	19.0	16.3	15.8	27.6	22.9	-	-	48
56		23.0	21.2	18.9	17.5	14.6	14.6	26.0	21.8	20.6	18.4	56
64		20.7	19.3	17.3	16.3	13.4	13.4	24.5	20.7	19.4	17.6	64
72		18.6	17.9	15.7	15.2	12.6	12.6	21.2	19.6	18.5	16.8	72
80		16.7	16.7	14.4	14.4	-	-	17.8	17.7	17.7	16.0	80
88		-	-	-	-	-	-	15.1	15.1	16.1	15.2	88
96		-	-	-	-	-	-	12.9	12.9	14.0	13.7	96
104		-	-	-	-	-	-	11.2	11.2	11.7	11.7	104
112		-	-	-	-	-	-	9.8	9.8	10.3	10.3	112
120		-	-	-	-	-	-	8.2	8.2	9.0	9.0	120
128		-	-	-	-	-	-	7.3	7.3	7.8	7.8	128
136		-	-	-	-	-	-	6.0	6.0	6.7	6.7	136
144		-	-	-	-	-	-	5.1	5.1	5.6	5.6	144
152		-	-	-	-	-	-	4.1	4.1	4.7	4.7	152
160		-	-	-	-	-	-	3.4	3.4	3.7	3.7	160

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
56		18.6	15.7	-	-	-	-	-	-	-	-	56
64		18.2	15.7	-	-	-	-	15.7	12.3	-	-	64
72		17.6	15.7	-	-	-	-	15.2	12.3	-	-	72
80		14.8	14.3	15.5	14.0	-	-	13.4	12.2	14.2	-	80
88		12.4	12.4	14.0	13.3	12.6	12.0	10.6	10.6	12.8	12.2	88
96		10.1	10.1	11.6	11.6	12.1	11.8	8.4	8.4	10.8	10.8	96
104		8.2	8.2	9.9	9.9	11.2	11.1	6.6	6.6	8.6	8.6	104
112		6.5	6.5	8.3	8.3	9.4	9.4	5.0	5.0	7.0	7.0	112
120		5.0	5.0	6.7	6.7	8.2	8.2	3.7	3.7	5.4	5.4	120
128		4.0	4.0	5.4	5.4	6.7	6.7	-	-	4.1	4.1	128
136		2.9	2.9	4.2	4.2	5.2	5.2	-	-	2.9	2.9	136
144		-	-	3.1	3.1	4.0	4.0	-	-	-	-	144

Operation










HAV-HY






33,100 lb +  33,100 lb		 75.5 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5				
		 42.3 ft				 126.0 ft								
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		36°		
ft		1,000 lb												ft
18	27.7	-	-	-	-	-	-	-	-	-	-	-	-	18
20	27.0	23.3	-	-	-	-	-	-	-	-	-	-	-	20
24	25.9	22.2	-	-	-	-	-	-	-	-	-	-	-	24
28	24.5	21.1	-	-	-	-	-	-	-	-	-	-	-	28
32	23.4	20.2	-	-	-	-	-	-	-	-	-	-	-	32
36	22.2	19.3	-	-	-	-	-	-	-	-	-	-	-	36
40	21.0	18.4	17.9	-	-	-	19.5	17.1	-	-	-	-	-	40
48	18.9	16.8	16.2	14.6	-	-	18.5	16.3	-	-	-	-	-	48
56	17.2	15.3	14.8	13.4	-	-	17.7	15.5	-	-	-	-	-	56
64	15.5	14.1	13.7	12.3	10.4	10.3	16.9	14.9	14.3	-	-	-	-	64
72	14.4	13.0	12.6	11.5	9.5	9.5	16.1	14.1	13.5	12.1	-	-	-	72
80	13.1	12.2	11.3	10.9	8.7	8.7	15.3	13.5	12.9	11.6	10.1	9.4	-	80
88	12.2	11.4	10.4	10.2	8.2	8.2	14.2	12.8	12.2	11.1	9.7	9.2	-	88
96	11.1	10.6	9.5	9.5	7.8	7.8	12.7	12.3	11.6	10.7	9.2	8.9	-	96
104	10.1	10.0	8.9	8.9	-	-	10.9	10.9	11.1	10.2	8.9	8.6	-	104
112	-	-	-	-	-	-	9.4	9.4	10.5	9.9	8.6	8.4	-	112
120	-	-	-	-	-	-	8.3	8.3	8.9	8.9	8.3	8.1	-	120
128	-	-	-	-	-	-	7.2	7.2	7.8	7.8	8.0	7.8	-	128
136	-	-	-	-	-	-	6.1	6.1	6.7	6.7	7.4	7.4	-	136
144	-	-	-	-	-	-	5.3	5.3	5.8	5.8	6.2	6.2	-	144
152	-	-	-	-	-	-	4.3	4.3	5.0	5.0	5.6	5.6	-	152
160	-	-	-	-	-	-	3.5	3.5	4.2	4.2	4.6	4.6	-	160
168	-	-	-	-	-	-	-	-	3.3	3.3	-	-	-	168
176	-	-	-	-	-	-	-	-	2.5	2.5	-	-	-	176

		 181.1 ft				 196.9 ft								
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		36°		
ft		1,000 lb												ft
64	12.8	11.0	-	-	-	-	-	-	-	-	-	-	-	64
72	12.4	11.0	-	-	-	-	11.2	8.8	-	-	-	-	-	72
80	12.0	11.0	-	-	-	-	11.0	8.8	-	-	-	-	-	80
88	11.2	10.5	10.5	9.6	-	-	10.0	8.8	-	-	-	-	-	88
96	9.5	9.4	10.2	9.3	-	-	7.7	7.7	9.6	8.7	-	-	-	96
104	7.5	7.5	9.4	9.1	8.6	-	5.9	5.9	8.5	8.4	-	-	-	104
112	5.9	5.9	8.3	8.3	8.4	7.7	4.3	4.3	7.0	7.0	7.9	7.3	-	112
120	4.6	4.6	6.7	6.7	7.9	7.4	3.1	3.1	5.4	5.4	7.5	7.1	-	120
128	3.5	3.5	5.4	5.4	6.9	6.8	-	-	4.1	4.1	6.2	6.2	-	128
136	2.4	2.4	4.2	4.2	6.0	6.0	-	-	2.9	2.9	4.9	4.9	-	136
144	-	-	3.1	3.1	4.7	4.7	-	-	-	-	3.6	3.6	-	144
152	-	-	-	-	3.6	3.6	-	-	-	-	-	-	-	152
160	-	-	-	-	2.7	2.7	-	-	-	-	-	-	-	160

Operation










HAV-HY






11,000 lb +  33,100 lb		 16.4 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
10	119.2	105.7	89.2	-	-	-	-	-	-	-	-	10	
12	113.1	101.2	85.9	80.0	-	-	-	-	-	-	-	12	
14	107.3	97.2	82.9	77.5	-	-	-	-	-	-	-	14	
16	102.0	93.4	80.1	75.4	65.7	61.8	-	-	-	-	-	16	
18	97.4	90.0	77.8	73.4	64.4	60.7	-	-	-	-	-	18	
20	93.1	86.8	75.5	71.4	63.1	59.6	-	-	-	-	-	20	
24	85.8	81.2	71.6	68.0	60.2	57.9	-	-	-	-	-	24	
28	79.5	76.4	67.6	65.3	57.2	56.3	62.6	56.3	-	-	-	28	
32	68.4	67.7	63.4	62.4	54.9	54.1	54.7	49.4	55.5	46.5	-	32	
36	56.8	56.8	55.9	55.4	52.1	51.6	47.7	43.5	47.8	45.0	48.0	36	
40	46.5	46.5	47.6	47.6	-	-	40.9	38.8	42.8	39.2	42.6	40.7	40
48	-	-	-	-	-	-	32.8	31.8	33.0	31.9	34.2	32.2	48
56	-	-	-	-	-	-	26.3	25.8	26.7	26.6	27.1	26.7	56
64	-	-	-	-	-	-	20.9	20.9	21.4	21.4	21.9	21.9	64
72	-	-	-	-	-	-	16.4	16.4	17.1	17.1	17.5	17.5	72
80	-	-	-	-	-	-	13.0	13.0	13.6	13.6	14.0	14.0	80
88	-	-	-	-	-	-	10.4	10.4	10.9	10.9	11.1	11.1	88
96	-	-	-	-	-	-	8.3	8.3	8.6	8.6	8.8	8.8	96
104	-	-	-	-	-	-	6.4	6.4	6.8	6.8	6.8	6.8	104
112	-	-	-	-	-	-	5.0	5.0	5.2	5.2	-	-	112
120	-	-	-	-	-	-	3.7	3.7	3.9	3.9	-	-	120
128	-	-	-	-	-	-	2.8	2.8	-	-	-	-	128

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
48	26.5	24.6	-	-	-	-	-	-	-	-	-	48	
56	20.5	19.6	21.7	20.7	22.9	21.7	18.4	17.5	19.6	-	-	56	
64	16.0	15.5	17.0	16.5	17.9	17.3	14.0	13.7	15.1	14.6	16.1	15.5	64
72	12.4	12.4	13.3	13.1	14.0	14.0	10.4	10.4	11.5	11.5	12.2	12.2	72
80	9.5	9.5	10.4	10.4	11.0	11.0	7.8	7.8	8.7	8.7	9.3	9.3	80
88	7.0	7.0	7.9	7.9	8.4	8.4	5.4	5.4	6.3	6.3	6.9	6.9	88
96	5.1	5.1	5.7	5.7	6.2	6.2	3.6	3.6	4.3	4.3	4.8	4.8	96
104	3.3	3.3	3.9	3.9	4.4	4.4	-	-	2.6	2.6	3.1	3.1	104

Operation










HAV-HY






11,000 lb +  33,100 lb		 36.1 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
10		72.7	59.8	-	-	-	-	-	-	-	-	10
12		69.1	57.4	-	-	-	-	-	-	-	-	12
14		65.8	55.3	-	-	-	-	-	-	-	-	14
16		62.8	53.1	-	-	-	-	-	-	-	-	16
18		60.0	51.2	-	-	-	-	-	-	-	-	18
20		57.4	49.3	44.3	-	-	-	-	-	-	-	20
24		52.7	45.9	41.2	37.6	-	-	-	-	-	-	24
28		48.7	42.9	38.7	35.4	-	-	-	-	-	-	28
32		45.2	40.2	36.6	33.6	28.2	26.3	46.1	39.7	-	-	32
36		42.1	37.9	34.7	32.1	27.0	25.4	43.0	37.9	-	-	36
40		39.1	35.7	32.8	30.7	25.8	24.6	40.5	36.4	35.3	-	40
48		34.5	32.3	29.6	28.3	23.3	23.0	31.7	30.1	32.2	28.4	48
56		29.0	28.3	26.5	26.2	21.7	21.7	26.1	25.0	27.3	25.3	56
64		23.1	23.1	23.4	23.4	-	-	21.3	20.9	22.2	21.3	64
72		-	-	-	-	-	-	17.3	17.3	17.7	17.7	72
80		-	-	-	-	-	-	13.9	13.9	15.0	15.0	80
88		-	-	-	-	-	-	11.3	11.3	12.4	12.4	88
96		-	-	-	-	-	-	9.0	9.0	10.0	10.0	96
104		-	-	-	-	-	-	7.3	7.3	7.9	7.9	104
112		-	-	-	-	-	-	5.7	5.7	6.3	6.3	112
120		-	-	-	-	-	-	4.4	4.4	5.0	5.0	120
128		-	-	-	-	-	-	3.3	3.3	3.9	3.9	128
136		-	-	-	-	-	-	2.4	2.4	2.8	2.8	136

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
56		20.6	18.9	-	-	-	-	18.5	16.2	-	-	56
64		16.2	15.5	18.3	-	-	-	14.3	13.5	-	-	64
72		12.4	12.2	14.4	14.2	-	-	10.7	10.6	12.9	-	72
80		9.5	9.5	11.3	11.3	13.0	12.8	7.8	7.8	9.7	9.7	80
88		7.1	7.1	8.8	8.8	10.2	10.2	5.4	5.4	7.2	7.2	88
96		5.2	5.2	6.6	6.6	7.9	7.9	3.6	3.6	5.2	5.2	96
104		3.5	3.5	4.8	4.8	6.0	6.0	-	-	3.5	3.5	104
112		-	-	3.5	3.5	4.3	4.3	-	-	-	-	112
120		-	-	-	-	3.0	3.0	-	-	-	-	120

Operation










HAV-HY






11,000 lb +  33,100 lb		 55.8 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
14	44.5	37.4	-	-	-	-	-	-	-	-	-	14	
16	43.0	36.4	-	-	-	-	-	-	-	-	-	16	
18	41.6	35.3	-	-	-	-	-	-	-	-	-	18	
20	40.1	34.2	-	-	-	-	-	-	-	-	-	20	
24	37.4	32.1	-	-	-	-	-	-	-	-	-	24	
28	34.9	30.3	-	-	-	-	-	-	-	-	-	28	
32	32.6	28.5	25.5	-	-	-	-	-	-	-	-	32	
36	30.6	27.0	24.1	21.8	-	-	30.0	24.8	-	-	-	36	
40	28.6	25.6	22.8	20.8	-	-	29.2	24.1	-	-	-	40	
48	25.5	23.3	20.7	19.0	16.3	15.8	27.2	22.9	-	-	-	48	
56	23.0	21.2	18.9	17.5	14.6	14.6	24.1	21.6	20.6	18.4	-	56	
64	20.7	19.3	17.3	16.3	13.4	13.4	20.7	19.3	19.4	17.6	-	64	
72	18.6	17.9	15.7	15.2	12.6	12.6	16.8	16.8	18.3	16.8	15.0	13.9	72
80	16.6	16.6	14.4	14.4	-	-	14.4	14.4	15.5	15.1	14.4	13.4	80
88	-	-	-	-	-	-	12.2	12.2	13.0	13.0	13.4	13.0	88
96	-	-	-	-	-	-	9.9	9.9	11.3	11.3	11.8	11.7	96
104	-	-	-	-	-	-	8.1	8.1	9.3	9.3	10.3	10.3	104
112	-	-	-	-	-	-	6.5	6.5	7.6	7.6	8.5	8.5	112
120	-	-	-	-	-	-	5.2	5.2	6.3	6.3	7.0	7.0	120
128	-	-	-	-	-	-	4.1	4.1	5.0	5.0	5.6	5.6	128
136	-	-	-	-	-	-	3.1	3.1	3.8	3.8	4.3	4.3	136
144	-	-	-	-	-	-	2.2	2.2	2.9	2.9	3.1	3.1	144

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
56	18.3	15.7	-	-	-	-	-	-	-	-	-	56	
64	15.8	14.7	-	-	-	-	13.9	12.3	-	-	-	64	
72	12.2	12.2	-	-	-	-	10.4	10.4	-	-	-	72	
80	9.3	9.3	12.1	12.1	-	-	7.6	7.6	10.6	-	-	80	
88	7.1	7.1	9.5	9.5	11.4	11.4	5.4	5.4	8.1	8.1	-	88	
96	5.2	5.2	7.4	7.4	9.5	9.5	3.6	3.6	6.1	6.1	8.1	8.1	96
104	3.7	3.7	5.7	5.7	7.5	7.5	-	-	4.2	4.2	6.2	6.2	104
112	-	-	4.1	4.1	5.9	5.9	-	-	-	-	4.6	4.6	112
120	-	-	2.8	2.8	4.3	4.3	-	-	-	-	3.2	3.2	120
128	-	-	-	-	3.1	3.1	-	-	-	-	-	-	128

Operation










HAV-HY






11,000 lb +  33,100 lb		 75.5 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft					1,000 lb						ft		
18	27.7	-	-	-	-	-	-	-	-	-	-	18	
20	27.0	23.3	-	-	-	-	-	-	-	-	-	20	
24	25.9	22.2	-	-	-	-	-	-	-	-	-	24	
28	24.5	21.1	-	-	-	-	-	-	-	-	-	28	
32	23.4	20.2	-	-	-	-	-	-	-	-	-	32	
36	22.2	19.3	-	-	-	-	-	-	-	-	-	36	
40	21.0	18.4	17.9	-	-	-	19.5	17.1	-	-	-	40	
48	18.9	16.8	16.2	14.6	-	-	18.5	16.3	-	-	-	48	
56	17.2	15.3	14.8	13.4	-	-	17.7	15.5	-	-	-	56	
64	15.5	14.1	13.7	12.3	10.4	10.3	16.9	14.9	14.3	-	-	64	
72	14.4	13.0	12.6	11.5	9.5	9.5	15.5	14.1	13.5	12.1	-	72	
80	13.1	12.2	11.3	10.9	8.7	8.7	13.5	12.9	12.9	11.6	10.1	9.4	80
88	12.2	11.4	10.4	10.2	8.2	8.2	11.8	11.7	12.0	11.1	9.7	9.2	88
96	11.1	10.6	9.5	9.5	7.8	7.8	9.8	9.8	10.9	10.4	9.2	8.9	96
104	10.1	10.0	8.9	8.9	-	-	8.1	8.1	9.6	9.5	8.9	8.6	104
112	-	-	-	-	-	-	6.6	6.6	8.3	8.3	8.5	8.1	112
120	-	-	-	-	-	-	5.4	5.4	6.7	6.7	7.5	7.5	120
128	-	-	-	-	-	-	4.3	4.3	5.5	5.5	6.5	6.5	128
136	-	-	-	-	-	-	3.3	3.3	4.4	4.4	5.3	5.3	136
144	-	-	-	-	-	-	2.5	2.5	3.4	3.4	4.2	4.2	144
152	-	-	-	-	-	-	-	-	-	-	3.2	3.2	152

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft					1,000 lb						ft		
64	12.8	11.0	-	-	-	-	-	9.3	8.8	-	-	64	
72	11.3	10.8	-	-	-	-	-	6.7	6.7	-	-	72	
80	8.7	8.7	-	-	-	-	-	4.7	4.7	-	-	80	
88	6.4	6.4	9.6	9.1	-	-	-	2.9	2.9	6.1	6.1	88	
96	4.7	4.7	7.5	7.5	-	-	-	-	-	4.4	4.4	96	
104	3.1	3.1	5.7	5.7	8.0	-	-	-	-	-	-	104	
112	-	-	4.1	4.1	6.5	6.5	-	-	-	-	5.4	-	112
120	-	-	3.0	3.0	5.0	5.0	-	-	-	-	3.9	-	120
128	-	-	-	-	3.7	3.7	-	-	-	-	-	-	128
136	-	-	-	-	2.7	2.7	-	-	-	-	-	-	136

Operation

HAV-HY

0 lb +  33,100 lb		 16.4 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
10	119.2	105.7	89.2	-	-	-	-	-	-	-	-	10	
12	113.1	101.2	85.9	80.0	-	-	-	-	-	-	-	12	
14	107.3	97.2	82.9	77.5	-	-	-	-	-	-	-	14	
16	102.0	93.4	80.1	75.4	65.7	61.8	-	-	-	-	-	16	
18	97.4	90.0	77.8	73.4	64.4	60.7	-	-	-	-	-	18	
20	93.1	86.8	75.5	71.4	63.1	59.6	-	-	-	-	-	20	
24	85.8	81.2	71.6	68.0	60.2	57.9	-	-	-	-	-	24	
28	75.2	73.5	67.6	65.3	57.2	56.3	56.5	50.6	-	-	-	28	
32	60.1	60.1	60.8	60.4	54.9	54.1	48.4	44.7	49.8	44.5	-	32	
36	49.4	49.4	50.9	50.9	49.0	48.5	42.4	39.6	42.8	40.1	44.1	38.5	36
40	40.3	40.3	41.3	41.3	-	-	37.6	35.1	38.0	35.7	38.2	36.4	40
48	-	-	-	-	-	-	29.7	27.7	30.2	28.8	30.2	29.3	48
56	-	-	-	-	-	-	22.7	22.1	23.8	23.1	24.4	23.9	56
64	-	-	-	-	-	-	17.3	17.3	18.2	18.2	18.9	18.8	64
72	-	-	-	-	-	-	13.3	13.3	14.0	14.0	14.6	14.6	72
80	-	-	-	-	-	-	10.4	10.4	10.9	10.9	11.3	11.3	80
88	-	-	-	-	-	-	8.0	8.0	8.5	8.5	8.8	8.8	88
96	-	-	-	-	-	-	6.1	6.1	6.5	6.5	6.7	6.7	96
104	-	-	-	-	-	-	4.4	4.4	4.8	4.8	5.0	5.0	104
112	-	-	-	-	-	-	3.2	3.2	3.5	3.5	-	-	112

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
48	21.7	20.4	-	-	-	-	-	-	-	-	-	48	
56	16.5	15.9	17.7	16.9	18.7	17.8	14.3	13.8	15.6	-	-	56	
64	12.4	12.2	13.4	13.1	14.3	13.9	10.4	10.4	11.6	11.5	12.4	12.4	64
72	9.1	9.1	10.0	10.0	10.9	10.9	7.3	7.3	8.2	8.2	9.1	9.1	72
80	6.5	6.5	7.3	7.3	8.0	8.0	5.0	5.0	5.8	5.8	6.5	6.5	80
88	4.4	4.4	5.1	5.1	5.7	5.7	-	-	3.6	3.6	4.2	4.2	88
96	-	-	3.4	3.4	3.8	3.8	-	-	-	-	-	-	96

Operation










HAV-HY






0 lb + 33,100 lb		36.1 ft		19.7 ft		32.2 ft/s		360°		ASME B30.5		
		42.3 ft				126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
10		72.7	59.8	-	-	-	-	-	-	-	-	10
12		69.1	57.4	-	-	-	-	-	-	-	-	12
14		65.8	55.3	-	-	-	-	-	-	-	-	14
16		62.8	53.1	-	-	-	-	-	-	-	-	16
18		60.0	51.2	-	-	-	-	-	-	-	-	18
20		57.4	49.3	44.3	-	-	-	-	-	-	-	20
24		52.7	45.9	41.2	37.6	-	-	-	-	-	-	24
28		48.7	42.9	38.7	35.4	-	-	-	-	-	-	28
32		45.2	40.2	36.6	33.6	28.2	26.3	45.1	39.0	-	-	32
36		42.1	37.9	34.7	32.1	27.0	25.4	40.1	35.5	-	-	36
40		39.0	35.7	32.8	30.7	25.8	24.6	35.9	33.6	34.9	-	40
48		32.6	31.4	29.6	28.3	23.3	23.0	28.6	27.2	29.4	27.3	48
56		25.0	25.0	25.5	25.2	21.7	21.7	23.4	22.0	24.1	22.6	56
64		19.5	19.5	20.3	20.3	-	-	18.4	17.8	19.3	19.2	64
72		-	-	-	-	-	-	14.4	14.4	16.0	16.0	72
80		-	-	-	-	-	-	11.3	11.3	12.6	12.6	80
88		-	-	-	-	-	-	9.0	9.0	10.0	10.0	88
96		-	-	-	-	-	-	7.0	7.0	7.8	7.8	96
104		-	-	-	-	-	-	5.3	5.3	6.2	6.2	104
112		-	-	-	-	-	-	3.9	3.9	4.6	4.6	112
120		-	-	-	-	-	-	-	-	3.3	3.3	120

		181.1 ft				196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
56		16.6	15.5	-	-	-	-	14.5	13.7	-	-	56
64		12.5	12.1	14.9	-	-	-	10.7	10.4	-	-	64
72		9.1	9.1	11.3	11.1	-	-	7.3	7.3	9.6	-	72
80		6.5	6.5	8.4	8.4	10.2	10.0	4.8	4.8	6.9	6.9	80
88		4.4	4.4	6.1	6.1	7.6	7.6	-	-	4.6	4.6	88
96		2.7	2.7	4.2	4.2	5.4	5.4	-	-	2.7	2.7	96
104		-	-	2.6	2.6	3.7	3.7	-	-	-	-	104

Operation










HAV-HY






0 lb +  33,100 lb		 55.8 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
14		44.5	37.4	-	-	-	-	-	-	-	-	14
16		43.0	36.4	-	-	-	-	-	-	-	-	16
18		41.6	35.3	-	-	-	-	-	-	-	-	18
20		40.1	34.2	-	-	-	-	-	-	-	-	20
24		37.4	32.1	-	-	-	-	-	-	-	-	24
28		34.9	30.3	-	-	-	-	-	-	-	-	28
32		32.6	28.5	25.5	-	-	-	-	-	-	-	32
36		30.6	27.0	24.1	21.8	-	-	30.0	24.8	-	-	36
40		28.6	25.6	22.8	20.8	-	-	29.0	24.1	-	-	40
48		25.5	23.3	20.7	19.0	16.3	15.8	25.4	22.4	-	-	48
56		23.0	21.2	18.9	17.5	14.6	14.6	21.9	20.2	20.6	18.4	56
64		20.7	19.3	17.3	16.3	13.4	13.4	18.3	17.7	18.8	17.4	64
72		17.3	17.2	15.7	15.2	12.6	12.6	14.8	14.6	16.2	15.7	72
80		14.4	14.4	14.3	14.3	-	-	12.0	12.0	13.7	13.7	80
88		-	-	-	-	-	-	9.6	9.6	11.4	11.4	88
96		-	-	-	-	-	-	7.8	7.8	9.2	9.2	96
104		-	-	-	-	-	-	6.2	6.2	7.5	7.5	104
112		-	-	-	-	-	-	4.8	4.8	5.9	5.9	112
120		-	-	-	-	-	-	3.5	3.5	4.5	4.5	120
128		-	-	-	-	-	-	-	-	3.3	3.3	128
136		-	-	-	-	-	-	-	-	-	-	136

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
56		16.2	14.5	-	-	-	-	-	-	-	-	56
64		12.3	12.1	-	-	-	-	10.2	10.1	-	-	64
72		9.1	9.1	-	-	-	-	7.1	7.1	-	-	72
80		6.5	6.5	9.3	9.3	-	-	4.7	4.7	7.8	-	80
88		4.5	4.5	7.0	7.0	9.3	9.3	-	-	5.4	-	88
96		2.9	2.9	5.0	5.0	7.0	7.0	-	-	3.6	-	96
104		-	-	3.5	3.5	5.3	5.3	-	-	-	4.0	104
112		-	-	-	-	3.7	3.7	-	-	-	-	112

Operation










HAV-HY






0 lb +  33,100 lb		 75.5 ft		 19.7 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
18		27.7	-	-	-	-	-	-	-	-	-	18
20		27.0	23.3	-	-	-	-	-	-	-	-	20
24		25.9	22.2	-	-	-	-	-	-	-	-	24
28		24.5	21.1	-	-	-	-	-	-	-	-	28
32		23.4	20.2	-	-	-	-	-	-	-	-	32
36		22.2	19.3	-	-	-	-	-	-	-	-	36
40		21.0	18.4	17.9	-	-	-	19.5	17.1	-	-	40
48		18.9	16.8	16.2	14.6	-	-	18.5	16.3	-	-	48
56		17.2	15.3	14.8	13.4	-	-	17.5	15.5	-	-	56
64		15.5	14.1	13.7	12.3	10.4	10.3	16.0	14.7	14.3	-	64
72		14.4	13.0	12.6	11.5	9.5	9.5	14.1	13.5	13.5	12.1	72
80		13.1	12.2	11.3	10.9	8.7	8.7	11.3	11.3	12.5	11.4	80
88		12.2	11.4	10.4	10.2	8.2	8.2	9.2	9.2	11.0	10.7	88
96		10.7	10.5	9.5	9.5	7.8	7.8	7.3	7.3	9.5	9.4	96
104		9.2	9.2	8.9	8.9	-	-	5.9	5.9	7.7	7.7	104
112		-	-	-	-	-	-	4.6	4.6	6.3	6.3	112
120		-	-	-	-	-	-	3.6	3.6	5.0	5.0	120
128		-	-	-	-	-	-	2.8	2.8	4.0	4.0	128
136		-	-	-	-	-	-	-	-	2.9	2.9	136
144		-	-	-	-	-	-	-	-	-	-	144

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
64		11.1	10.6	-	-	-	-	-	-	-	-	64
72		8.0	8.0	-	-	-	-	6.2	6.2	-	-	72
80		5.7	5.7	-	-	-	-	3.9	3.9	-	-	80
88		3.9	3.9	7.0	7.0	-	-	-	-	-	-	88
96		-	-	5.1	5.1	-	-	-	-	-	-	96
104		-	-	3.5	3.5	6.0	-	-	-	-	-	104
112		-	-	-	-	4.6	4.6	-	-	-	-	112
120		-	-	-	-	3.2	3.2	-	-	-	-	120

Operation










HAV-HY






99,200 lb +  33,100 lb		 16.4 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
10	119.2	105.7	89.2	-	-	-	-	-	-	-	-	10	
12	113.1	101.2	85.9	80.0	-	-	-	-	-	-	-	12	
14	107.3	97.2	82.9	77.5	-	-	-	-	-	-	-	14	
16	102.0	93.4	80.1	75.4	65.7	61.8	-	-	-	-	-	16	
18	97.4	90.0	77.8	73.4	64.4	60.7	-	-	-	-	-	18	
20	93.1	86.8	75.5	71.4	63.1	59.6	-	-	-	-	-	20	
24	85.8	81.2	71.6	68.0	60.2	57.9	-	-	-	-	-	24	
28	79.5	76.4	67.6	65.3	57.2	56.3	74.9	68.0	-	-	-	28	
32	74.6	72.0	63.4	62.4	54.9	54.1	67.0	65.9	62.7	-	-	32	
36	69.8	67.7	59.6	58.7	53.1	52.5	60.8	60.8	58.6	56.5	51.0	36	
40	64.7	63.1	56.0	55.2	-	-	55.1	55.3	54.4	53.1	49.0	48.8	40
48	-	-	-	-	-	-	46.6	46.3	45.8	44.8	44.0	43.8	48
56	-	-	-	-	-	-	38.8	38.7	39.1	38.4	38.4	38.3	56
64	-	-	-	-	-	-	32.9	32.7	32.3	32.2	32.7	32.7	64
72	-	-	-	-	-	-	27.5	27.5	27.8	27.8	27.4	27.4	72
80	-	-	-	-	-	-	23.0	23.0	23.6	23.6	23.9	23.9	80
88	-	-	-	-	-	-	19.5	19.5	19.9	19.9	20.3	20.3	88
96	-	-	-	-	-	-	17.0	17.0	17.1	17.1	17.3	17.3	96
104	-	-	-	-	-	-	15.6	15.6	15.4	15.4	15.4	15.4	104
112	-	-	-	-	-	-	13.8	13.8	14.0	14.0	-	-	112
120	-	-	-	-	-	-	12.0	12.0	12.2	12.2	-	-	120
128	-	-	-	-	-	-	10.7	10.7	-	-	-	-	128

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
48	35.0	28.4	-	-	-	-	-	-	-	-	-	48	
56	31.0	27.6	30.2	27.3	29.5	-	24.7	22.3	24.8	-	-	56	
64	27.2	25.1	26.7	24.8	26.4	24.4	22.1	21.0	22.0	21.2	21.9	21.2	64
72	23.9	22.1	23.7	21.9	23.4	21.9	19.5	19.0	19.2	19.2	19.2	19.2	72
80	20.7	19.2	21.0	19.2	20.8	19.3	17.0	16.9	17.1	17.1	17.1	17.1	80
88	18.1	16.9	18.4	17.0	18.5	17.1	14.8	14.7	15.0	14.9	15.2	15.0	88
96	15.4	14.9	15.8	15.1	16.2	15.1	12.9	12.8	13.1	13.1	13.2	13.1	96
104	13.1	13.0	13.5	13.2	13.7	13.4	11.2	11.2	11.4	11.4	11.6	11.4	104
112	11.0	10.9	11.4	11.4	11.6	11.6	9.8	9.8	10.1	9.9	10.1	10.1	112
120	9.8	9.0	9.5	9.5	9.7	9.7	8.5	8.5	8.8	8.7	8.8	8.8	120
128	8.1	7.9	8.2	8.2	8.3	8.3	7.2	7.2	7.5	7.4	7.7	7.7	128
136	6.7	6.7	7.1	7.1	7.1	7.1	5.8	5.8	6.0	6.0	6.3	6.3	136
144	5.6	5.6	5.8	5.8	6.0	6.0	4.5	4.5	4.7	4.7	4.9	4.9	144
152	4.5	4.5	4.7	4.7	4.7	4.7	3.4	3.4	3.6	3.6	3.8	3.8	152
160	3.5	3.5	3.6	3.6	-	-	-	-	-	-	2.7	2.7	160

Operation










HAV-HY






99,200 lb +  33,100 lb		 36.1 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
10		72.7	59.8	-	-	-	-	-	-	-	-	10
12		69.1	57.4	-	-	-	-	-	-	-	-	12
14		65.8	55.3	-	-	-	-	-	-	-	-	14
16		62.8	53.1	-	-	-	-	-	-	-	-	16
18		60.0	51.2	-	-	-	-	-	-	-	-	18
20		57.4	49.3	44.3	-	-	-	-	-	-	-	20
24		52.7	45.9	41.2	37.6	-	-	-	-	-	-	24
28		48.7	42.9	38.7	35.4	-	-	-	-	-	-	28
32		45.2	40.2	36.6	33.6	28.2	26.3	46.1	39.7	-	-	32
36		42.1	37.9	34.7	32.1	27.0	25.4	44.7	38.6	-	-	36
40		39.1	35.7	32.8	30.7	25.8	24.6	43.2	37.6	35.3	-	40
48		34.5	32.3	29.6	28.3	23.3	23.0	40.4	35.7	33.4	28.8	48
56		31.0	29.5	26.5	26.2	21.7	21.7	36.6	33.9	31.4	27.5	56
64		27.6	26.9	24.2	24.2	-	-	32.2	31.8	29.3	26.5	64
72		-	-	-	-	-	-	27.0	27.0	27.2	25.4	72
80		-	-	-	-	-	-	23.0	23.0	23.9	23.0	80
88		-	-	-	-	-	-	20.0	20.0	20.5	20.2	88
96		-	-	-	-	-	-	17.6	17.6	17.4	17.3	96
104		-	-	-	-	-	-	15.1	15.1	14.9	14.9	104
112		-	-	-	-	-	-	13.1	13.1	13.8	13.8	112
120		-	-	-	-	-	-	11.4	11.4	12.0	12.0	120
128		-	-	-	-	-	-	10.5	10.5	10.4	10.4	128
136		-	-	-	-	-	-	9.7	9.7	9.4	9.0	136
144		-	-	-	-	-	-	8.6	8.6	8.4	8.4	144

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
56		25.0	21.4	-	-	-	-	20.5	16.8	-	-	56
64		23.1	21.4	-	-	-	-	19.6	16.8	-	-	64
72		20.8	20.1	19.7	19.7	-	-	18.1	16.8	17.7	-	72
80		18.4	18.4	18.0	17.8	17.2	17.2	16.2	15.5	16.1	15.7	80
88		16.3	16.3	16.2	16.2	15.9	15.9	14.4	14.2	14.4	14.3	88
96		14.5	14.5	14.7	14.6	14.7	14.5	12.6	12.6	12.8	12.8	96
104		12.8	12.8	13.2	13.2	13.4	13.4	11.0	11.0	11.4	11.4	104
112		11.4	11.4	11.8	11.6	12.0	12.0	9.6	9.6	10.1	10.1	112
120		9.8	9.8	10.5	10.3	10.7	10.7	8.3	8.3	8.8	8.8	120
128		8.1	8.1	9.0	9.0	9.4	9.4	7.3	7.3	7.7	7.7	128
136		6.8	6.8	7.4	7.4	8.0	8.0	6.2	6.2	6.6	6.6	136
144		6.0	6.0	6.2	6.2	6.5	6.5	5.1	5.1	5.8	5.8	144
152		4.9	4.9	5.4	5.4	5.6	5.6	4.0	4.0	4.7	4.7	152
160		3.9	3.9	4.5	4.5	4.7	4.7	3.0	3.0	3.6	3.6	160
168		-	-	3.5	3.5	3.7	3.7	-	-	-	-	168
176		-	-	2.6	2.6	2.8	2.8	-	-	-	-	176

Operation










HAV-HY






99,200 lb +  33,100 lb		 55.8 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
14		44.5	37.4	-	-	-	-	-	-	-	-	14
16		43.0	36.4	-	-	-	-	-	-	-	-	16
18		41.6	35.3	-	-	-	-	-	-	-	-	18
20		40.1	34.2	-	-	-	-	-	-	-	-	20
24		37.4	32.1	-	-	-	-	-	-	-	-	24
28		34.9	30.3	-	-	-	-	-	-	-	-	28
32		32.6	28.5	25.5	-	-	-	-	-	-	-	32
36		30.6	27.0	24.1	21.8	-	-	30.0	24.8	-	-	36
40		28.6	25.6	22.8	20.8	-	-	29.2	24.1	-	-	40
48		25.5	23.3	20.7	19.0	16.3	15.8	27.6	22.9	-	-	48
56		23.0	21.2	18.9	17.5	14.6	14.6	26.0	21.8	20.6	18.4	56
64		20.7	19.3	17.3	16.3	13.4	13.4	24.5	20.7	19.4	17.6	64
72		18.6	17.9	15.7	15.2	12.6	12.6	23.2	19.6	18.5	16.8	72
80		16.7	16.7	14.4	14.4	-	-	21.9	18.8	17.7	16.0	80
88		-	-	-	-	-	-	20.1	17.9	16.9	15.5	88
96		-	-	-	-	-	-	17.1	16.7	16.1	14.9	96
104		-	-	-	-	-	-	15.0	15.0	15.3	14.4	104
112		-	-	-	-	-	-	12.9	12.9	13.8	13.8	112
120		-	-	-	-	-	-	11.5	11.5	12.2	12.2	120
128		-	-	-	-	-	-	10.6	10.6	10.6	10.6	128
136		-	-	-	-	-	-	9.3	9.3	9.4	9.4	136
144		-	-	-	-	-	-	8.0	8.0	8.6	8.6	144
152		-	-	-	-	-	-	6.9	6.9	7.5	7.5	152
160		-	-	-	-	-	-	6.4	6.4	6.3	6.3	160

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
56		18.6	15.7	-	-	-	-	-	-	-	-	56
64		18.2	15.7	-	-	-	-	15.7	12.3	-	-	64
72		17.6	15.7	-	-	-	-	15.2	12.3	-	-	72
80		16.8	15.4	15.5	14.0	-	-	14.6	12.3	14.2	-	80
88		15.4	14.9	14.4	13.5	12.6	12.0	13.7	12.3	13.1	12.3	88
96		14.1	13.9	13.3	12.9	12.1	11.8	12.2	11.9	12.0	11.7	96
104		12.5	12.5	12.4	12.2	11.5	11.3	10.7	10.7	10.9	10.9	104
112		11.2	11.2	11.4	11.4	11.0	11.0	9.6	9.4	9.9	9.9	112
120		10.0	10.0	10.3	10.3	10.2	10.2	8.3	8.3	8.8	8.8	120
128		8.7	8.7	9.3	9.3	9.4	9.4	7.3	7.3	7.8	7.8	128
136		7.4	7.4	8.3	8.2	8.6	8.6	6.4	6.2	6.9	6.9	136
144		6.0	6.0	7.3	7.3	7.5	7.5	5.3	5.3	6.0	6.0	144
152		5.0	5.0	6.0	6.0	6.7	6.7	4.7	4.5	5.2	5.2	152
160		4.5	4.5	5.0	5.0	5.5	5.5	3.6	3.6	4.4	4.4	160
168		3.7	3.7	4.1	4.1	4.4	4.4	-	-	3.6	3.6	168
176		2.8	2.8	3.6	3.6	3.6	3.6	-	-	2.8	2.8	176
184		-	-	-	-	3.0	3.0	-	-	-	-	184

Operation

HAV-HY

99,200 lb +  33,100 lb		 75.5 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
18	27.7	-	-	-	-	-	-	-	-	-	-	18	
20	27.0	23.3	-	-	-	-	-	-	-	-	-	20	
24	25.9	22.2	-	-	-	-	-	-	-	-	-	24	
28	24.5	21.1	-	-	-	-	-	-	-	-	-	28	
32	23.4	20.2	-	-	-	-	-	-	-	-	-	32	
36	22.2	19.3	-	-	-	-	-	-	-	-	-	36	
40	21.0	18.4	17.9	-	-	-	19.5	17.1	-	-	-	40	
48	18.9	16.8	16.2	14.6	-	-	18.5	16.3	-	-	-	48	
56	17.2	15.3	14.8	13.4	-	-	17.7	15.5	-	-	-	56	
64	15.5	14.1	13.7	12.3	10.4	10.3	16.9	14.9	14.3	-	-	64	
72	14.4	13.0	12.6	11.5	9.5	9.5	16.1	14.1	13.5	12.1	-	72	
80	13.1	12.2	11.3	10.9	8.7	8.7	15.3	13.5	12.9	11.6	10.1	9.4	80
88	12.2	11.4	10.4	10.2	8.2	8.2	14.5	12.8	12.2	11.1	9.7	9.2	88
96	11.1	10.6	9.5	9.5	7.8	7.8	13.8	12.3	11.6	10.7	9.2	8.9	96
104	10.1	10.0	8.9	8.9	-	-	13.1	11.8	11.1	10.2	8.9	8.6	104
112	-	-	-	-	-	-	12.5	11.4	10.8	9.9	8.6	8.4	112
120	-	-	-	-	-	-	11.6	10.9	10.3	9.6	8.3	8.1	120
128	-	-	-	-	-	-	10.1	10.0	10.0	9.1	8.0	7.9	128
136	-	-	-	-	-	-	8.7	8.7	9.6	8.9	7.8	7.8	136
144	-	-	-	-	-	-	7.7	7.7	8.6	8.6	7.7	7.7	144
152	-	-	-	-	-	-	7.1	7.1	7.3	7.3	7.4	7.4	152
160	-	-	-	-	-	-	6.1	6.1	6.4	6.4	6.7	6.7	160
168	-	-	-	-	-	-	5.3	5.3	5.8	5.8	-	-	168
176	-	-	-	-	-	-	4.7	4.7	5.0	5.0	-	-	176
184	-	-	-	-	-	-	4.4	4.4	-	-	-	-	184

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
64	12.8	11.0	-	-	-	-	-	-	-	-	-	64	
72	12.4	11.0	-	-	-	-	11.2	8.8	-	-	-	72	
80	12.1	11.0	-	-	-	-	11.0	8.8	-	-	-	80	
88	11.8	10.7	10.5	9.6	-	-	10.7	8.8	-	-	-	88	
96	11.5	10.4	10.2	9.3	-	-	10.4	8.8	9.6	8.7	-	96	
104	11.3	10.2	10.0	9.1	8.6	-	9.8	8.8	9.3	8.4	-	104	
112	10.3	9.7	9.7	8.8	8.4	7.7	9.0	8.8	8.8	8.3	7.9	7.3	112
120	9.5	9.4	9.3	8.5	8.1	7.4	8.0	7.9	8.2	7.9	7.6	7.2	120
128	8.6	8.6	8.6	8.3	7.8	7.3	7.0	6.9	7.4	7.4	7.2	6.9	128
136	7.4	7.4	7.9	7.8	7.6	7.1	6.1	6.1	6.7	6.6	6.7	6.7	136
144	6.2	6.2	7.3	7.1	7.1	7.1	5.3	5.1	6.0	6.0	6.2	6.2	144
152	5.1	5.1	6.5	6.5	6.7	6.5	4.5	4.3	5.2	5.2	5.6	5.4	152
160	4.1	4.1	5.4	5.4	5.9	5.9	3.5	3.5	4.4	4.4	4.9	4.8	160
168	3.5	3.5	4.4	4.4	5.1	5.1	-	-	3.7	3.7	4.2	4.1	168
176	2.9	2.9	3.4	3.4	4.3	4.3	-	-	3.2	3.2	3.4	3.4	176
184	-	-	2.8	2.8	3.4	3.4	-	-	-	-	2.8	2.8	184

Operation










HAV-HY






77,200 lb + 33,100 lb		16.4 ft		15.6 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
ft	0,3°		1°		0,3°		1°		0,3°		1°		
	0°		18°		36°		0°		18°		36°		
1,000 lb													
10	119.2	105.7	89.2	-	-	-	-	-	-	-	-	10	
12	113.1	101.2	85.9	80.0	-	-	-	-	-	-	-	12	
14	107.3	97.2	82.9	77.5	-	-	-	-	-	-	-	14	
16	102.0	93.4	80.1	75.4	65.7	61.8	-	-	-	-	-	16	
18	97.4	90.0	77.8	73.4	64.4	60.7	-	-	-	-	-	18	
20	93.1	86.8	75.5	71.4	63.1	59.6	-	-	-	-	-	20	
24	85.8	81.2	71.6	68.0	60.2	57.9	-	-	-	-	-	24	
28	79.5	76.4	67.6	65.3	57.2	56.3	74.9	68.0	-	-	-	28	
32	74.6	72.0	63.4	62.4	54.9	54.1	67.0	65.9	62.7	-	-	32	
36	67.0	65.7	59.6	58.7	53.1	52.5	60.8	59.5	58.6	56.5	51.0	36	
40	58.8	58.8	55.7	54.9	-	-	54.7	52.5	54.3	53.1	49.0	48.8	40
48	-	-	-	-	-	-	42.7	42.4	43.5	43.4	43.2	43.0	48
56	-	-	-	-	-	-	34.6	34.6	34.4	34.4	34.7	34.7	56
64	-	-	-	-	-	-	27.9	27.9	28.6	28.6	28.5	28.4	64
72	-	-	-	-	-	-	23.0	23.0	23.3	23.3	23.9	23.9	72
80	-	-	-	-	-	-	20.4	20.4	20.1	20.0	20.1	20.1	80
88	-	-	-	-	-	-	17.2	17.2	17.6	17.6	17.8	17.8	88
96	-	-	-	-	-	-	14.6	14.6	15.1	15.1	15.3	15.3	96
104	-	-	-	-	-	-	12.6	12.6	12.8	12.8	13.1	13.1	104
112	-	-	-	-	-	-	11.0	11.0	11.0	11.0	-	-	112
120	-	-	-	-	-	-	9.8	9.8	9.8	9.8	-	-	120
128	-	-	-	-	-	-	8.5	8.5	-	-	-	-	128

		181.1 ft				196.9 ft							
ft	0,3°		1°		0,3°		1°		0,3°		1°		
	0°		18°		36°		0°		18°		36°		
1,000 lb													
48	35.0	28.4	-	-	-	-	-	-	-	-	-	48	
56	31.0	27.6	30.2	27.3	29.5	-	24.7	22.3	24.8	-	-	56	
64	26.3	25.1	26.7	24.8	26.4	24.4	22.1	21.0	22.0	21.2	21.9	21.2	64
72	21.5	21.5	22.2	21.9	22.8	21.9	19.5	19.0	19.2	19.2	19.2	19.2	72
80	17.7	17.6	18.2	18.2	18.9	18.9	17.0	16.8	17.1	17.1	17.1	17.1	80
88	15.2	14.5	15.1	15.1	15.5	15.5	14.3	14.3	14.8	14.8	15.1	15.0	88
96	12.6	12.6	13.0	13.0	13.1	13.1	11.8	11.8	12.4	12.4	12.9	12.9	96
104	10.4	10.4	11.1	11.1	11.3	11.3	9.5	9.5	10.0	10.0	10.4	10.4	104
112	8.5	8.5	8.9	8.9	9.4	9.4	7.4	7.4	8.1	8.1	8.5	8.5	112
120	6.9	6.9	7.3	7.3	7.6	7.6	5.8	5.8	6.2	6.2	6.7	6.7	120
128	5.4	5.4	5.8	5.8	5.9	5.9	4.3	4.3	4.7	4.7	5.1	5.1	128
136	4.2	4.2	4.5	4.5	4.7	4.7	3.1	3.1	3.4	3.4	3.6	3.6	136
144	3.1	3.1	3.4	3.4	3.4	3.4	-	-	2.3	2.3	2.5	2.5	144

Operation

HAV-HY

77,200 lb +  33,100 lb		 36.1 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
 ft	 0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		 ft		
	0°		18°		36°		0°		36°				
1,000 lb													
10	72.7	59.8	-	-	-	-	-	-	-	-	10		
12	69.1	57.4	-	-	-	-	-	-	-	-	12		
14	65.8	55.3	-	-	-	-	-	-	-	-	14		
16	62.8	53.1	-	-	-	-	-	-	-	-	16		
18	60.0	51.2	-	-	-	-	-	-	-	-	18		
20	57.4	49.3	44.3	-	-	-	-	-	-	-	20		
24	52.7	45.9	41.2	37.6	-	-	-	-	-	-	24		
28	48.7	42.9	38.7	35.4	-	-	-	-	-	-	28		
32	45.2	40.2	36.6	33.6	28.2	26.3	46.1	39.7	-	-	32		
36	42.1	37.9	34.7	32.1	27.0	25.4	44.7	38.6	-	-	36		
40	39.1	35.7	32.8	30.7	25.8	24.6	43.2	37.6	35.3	-	40		
48	34.5	32.3	29.6	28.3	23.3	23.0	40.1	35.7	33.4	28.8	48		
56	31.0	29.5	26.5	26.2	21.7	21.7	34.2	32.8	31.4	27.5	24.8	23.0	56
64	27.6	26.9	24.2	24.2	-	-	27.7	27.7	28.8	26.5	23.6	22.4	64
72	-	-	-	-	-	-	23.6	23.6	24.1	23.9	22.5	21.6	72
80	-	-	-	-	-	-	19.8	19.8	20.0	20.0	20.9	20.7	80
88	-	-	-	-	-	-	16.8	16.8	17.5	16.9	17.7	17.7	88
96	-	-	-	-	-	-	14.8	14.8	15.1	15.1	14.8	14.8	96
104	-	-	-	-	-	-	13.2	13.2	13.2	12.8	13.2	13.2	104
112	-	-	-	-	-	-	11.4	11.4	11.4	11.4	11.4	11.4	112
120	-	-	-	-	-	-	10.0	10.0	10.3	10.3	10.4	10.4	120
128	-	-	-	-	-	-	8.7	8.7	9.0	9.0	6.8	6.8	128
136	-	-	-	-	-	-	7.5	7.5	7.8	7.8	-	-	136
144	-	-	-	-	-	-	6.6	6.6	6.5	6.5	-	-	144

		 181.1 ft				 196.9 ft							
 ft	 0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		 ft		
	0°		18°		36°		0°		36°				
1,000 lb													
56	25.0	21.4	-	-	-	-	20.5	16.8	-	-	-	56	
64	23.1	21.4	-	-	-	-	19.6	16.8	-	-	-	64	
72	20.8	20.1	19.7	19.7	-	-	18.1	16.8	17.7	-	-	72	
80	18.2	18.1	18.0	17.8	17.2	17.2	16.2	15.5	16.1	15.7	15.4	15.4	80
88	15.2	15.2	16.0	16.0	15.9	15.9	14.4	14.2	14.4	14.3	14.2	14.1	88
96	12.6	12.6	13.7	13.7	14.4	14.4	12.2	12.2	12.8	12.8	13.0	12.8	96
104	10.7	10.7	11.5	11.5	12.4	12.4	10.0	10.0	11.2	11.2	11.6	11.6	104
112	9.2	9.2	9.8	9.8	10.3	10.3	8.1	8.1	9.4	9.4	10.3	10.3	112
120	7.6	7.6	8.4	8.4	8.8	8.8	6.5	6.5	7.6	7.6	8.4	8.4	120
128	6.1	6.1	6.9	6.9	7.5	7.5	5.0	5.0	5.9	5.9	6.6	6.6	128
136	4.7	4.7	5.6	5.6	6.0	6.0	3.8	3.8	4.5	4.5	5.2	5.2	136
144	3.6	3.6	4.2	4.2	4.7	4.7	2.7	2.7	3.4	3.4	4.0	4.0	144
152	-	-	3.2	3.2	3.6	3.6	-	-	-	-	-	-	152

Operation










HAV-HY






77,200 lb + 33,100 lb		55.8 ft		15.6 ft		32.2 ft/s		360°		ASME B30.5	
		42.3 ft				126.0 ft					
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft
	0°		18°		36°		0°		18°		
1,000 lb											
14	44.5	37.4	-	-	-	-	-	-	-	-	14
16	43.0	36.4	-	-	-	-	-	-	-	-	16
18	41.6	35.3	-	-	-	-	-	-	-	-	18
20	40.1	34.2	-	-	-	-	-	-	-	-	20
24	37.4	32.1	-	-	-	-	-	-	-	-	24
28	34.9	30.3	-	-	-	-	-	-	-	-	28
32	32.6	28.5	25.5	-	-	-	-	-	-	-	32
36	30.6	27.0	24.1	21.8	-	-	30.0	24.8	-	-	36
40	28.6	25.6	22.8	20.8	-	-	29.2	24.1	-	-	40
48	25.5	23.3	20.7	19.0	16.3	15.8	27.6	22.9	-	-	48
56	23.0	21.2	18.9	17.5	14.6	14.6	26.0	21.8	20.6	18.4	56
64	20.7	19.3	17.3	16.3	13.4	13.4	24.5	20.7	19.4	17.6	64
72	18.6	17.9	15.7	15.2	12.6	12.6	23.2	19.6	18.5	16.8	72
80	16.7	16.7	14.4	14.4	-	-	19.8	18.7	17.7	16.0	80
88	-	-	-	-	-	-	16.6	16.6	16.9	15.5	88
96	-	-	-	-	-	-	14.4	14.4	15.3	14.9	96
104	-	-	-	-	-	-	12.8	12.8	13.3	13.3	104
112	-	-	-	-	-	-	10.9	10.9	11.4	11.4	112
120	-	-	-	-	-	-	9.7	9.7	10.3	10.3	120
128	-	-	-	-	-	-	8.7	8.7	8.9	8.9	128
136	-	-	-	-	-	-	7.9	7.9	8.1	8.1	136
144	-	-	-	-	-	-	6.9	6.9	7.3	7.3	144
152	-	-	-	-	-	-	5.8	5.8	6.5	6.5	152
160	-	-	-	-	-	-	5.0	5.0	5.4	5.4	160

		181.1 ft				196.9 ft					
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft
	0°		18°		36°		0°		18°		
1,000 lb											
56	18.6	15.7	-	-	-	-	-	-	-	-	56
64	18.2	15.7	-	-	-	-	15.7	12.3	-	-	64
72	17.6	15.7	-	-	-	-	15.2	12.3	-	-	72
80	16.8	15.4	15.5	14.0	-	-	14.6	12.3	14.2	-	80
88	15.2	14.8	14.4	13.5	12.6	12.0	13.7	12.3	13.1	12.3	88
96	13.1	13.0	13.3	12.9	12.1	11.8	12.0	11.8	12.0	11.7	96
104	10.8	10.8	12.4	12.2	11.5	11.3	10.0	10.0	10.9	10.9	104
112	9.2	9.2	10.7	10.7	11.0	11.0	8.3	8.3	9.8	9.8	112
120	8.1	8.1	9.1	9.1	10.0	10.0	6.7	6.7	8.4	8.4	120
128	6.7	6.7	7.6	7.6	8.6	8.6	5.4	5.4	6.9	6.9	128
136	5.5	5.5	6.6	6.6	7.0	7.0	4.2	4.2	5.6	5.6	136
144	4.2	4.2	5.4	5.4	6.2	6.2	3.1	3.1	4.5	4.5	144
152	3.4	3.4	4.3	4.3	4.9	4.9	-	-	3.4	3.4	152
160	-	-	3.3	3.3	3.9	3.9	-	-	-	-	160

Operation










HAV-HY






77,200 lb +  33,100 lb		 75.5 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
18		27.7	-	-	-	-	-	-	-	-	-	18
20		27.0	23.3	-	-	-	-	-	-	-	-	20
24		25.9	22.2	-	-	-	-	-	-	-	-	24
28		24.5	21.1	-	-	-	-	-	-	-	-	28
32		23.4	20.2	-	-	-	-	-	-	-	-	32
36		22.2	19.3	-	-	-	-	-	-	-	-	36
40		21.0	18.4	17.9	-	-	-	19.5	17.1	-	-	40
48		18.9	16.8	16.2	14.6	-	-	18.5	16.3	-	-	48
56		17.2	15.3	14.8	13.4	-	-	17.7	15.5	-	-	56
64		15.5	14.1	13.7	12.3	10.4	10.3	16.9	14.9	14.3	-	64
72		14.4	13.0	12.6	11.5	9.5	9.5	16.1	14.1	13.5	12.1	72
80		13.1	12.2	11.3	10.9	8.7	8.7	15.3	13.5	12.9	11.6	80
88		12.2	11.4	10.4	10.2	8.2	8.2	14.5	12.8	12.2	11.1	88
96		11.1	10.6	9.5	9.5	7.8	7.8	13.7	12.3	11.6	10.7	96
104		10.1	10.0	8.9	8.9	-	-	12.3	11.8	11.1	10.2	104
112		-	-	-	-	-	-	10.7	10.5	10.8	9.9	112
120		-	-	-	-	-	-	9.6	9.6	10.1	9.6	120
128		-	-	-	-	-	-	8.4	8.4	8.9	8.8	128
136		-	-	-	-	-	-	7.4	7.4	8.1	8.1	136
144		-	-	-	-	-	-	6.4	6.4	6.9	6.9	144
152		-	-	-	-	-	-	5.9	5.9	6.1	6.1	152
160		-	-	-	-	-	-	5.2	5.2	5.4	5.4	160
168		-	-	-	-	-	-	4.3	4.3	4.7	4.7	168
176		-	-	-	-	-	-	3.6	3.6	4.1	4.1	176
184		-	-	-	-	-	-	3.1	3.1	-	-	184

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
64		12.8	11.0	-	-	-	-	-	-	-	-	64
72		12.4	11.0	-	-	-	-	11.2	8.8	-	-	72
80		12.1	11.0	-	-	-	-	11.0	8.8	-	-	80
88		11.8	10.7	10.5	9.6	-	-	10.7	8.8	-	-	88
96		11.5	10.4	10.2	9.3	-	-	10.4	8.8	9.6	8.7	96
104		10.2	10.0	10.0	9.1	8.6	-	9.2	8.8	9.3	8.4	104
112		8.8	8.6	9.7	8.8	8.4	7.7	7.6	7.6	8.8	8.3	112
120		7.6	7.6	9.1	8.5	8.1	7.4	6.1	6.1	8.1	7.8	120
128		6.3	6.3	7.6	7.6	7.8	7.3	4.8	4.8	6.9	6.9	128
136		5.1	5.1	6.4	6.4	7.6	7.1	3.8	3.8	5.6	5.6	136
144		4.0	4.0	5.8	5.8	6.7	6.6	2.7	2.7	4.5	4.5	144
152		3.2	3.2	4.7	4.7	5.4	5.4	-	-	3.4	3.4	152
160		-	-	3.7	3.7	4.6	4.6	-	-	-	-	160
168		-	-	-	-	3.7	3.7	-	-	-	-	168
176		-	-	-	-	2.8	2.8	-	-	-	-	176

Operation










HAV-HY






55,100 lb +  33,100 lb		 16.4 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
10	119.2	105.7	89.2	-	-	-	-	-	-	-	-	10	
12	113.1	101.2	85.9	80.0	-	-	-	-	-	-	-	12	
14	107.3	97.2	82.9	77.5	-	-	-	-	-	-	-	14	
16	102.0	93.4	80.1	75.4	65.7	61.8	-	-	-	-	-	16	
18	97.4	90.0	77.8	73.4	64.4	60.7	-	-	-	-	-	18	
20	93.1	86.8	75.5	71.4	63.1	59.6	-	-	-	-	-	20	
24	85.8	81.2	71.6	68.0	60.2	57.9	-	-	-	-	-	24	
28	79.5	76.4	67.6	65.3	57.2	56.3	72.0	64.2	-	-	-	28	
32	69.2	68.5	63.4	62.4	54.9	54.1	61.9	56.1	62.7	-	-	32	
36	58.6	58.6	57.0	56.6	53.1	52.5	54.3	49.9	55.7	51.3	51.0	36	
40	49.2	49.2	50.1	50.1	-	-	47.9	45.1	48.5	45.1	48.4	46.8	40
48	-	-	-	-	-	-	36.2	35.9	36.3	36.3	37.2	36.9	48
56	-	-	-	-	-	-	28.8	28.8	29.1	29.1	29.7	29.7	56
64	-	-	-	-	-	-	23.8	23.8	24.1	24.1	24.3	24.3	64
72	-	-	-	-	-	-	19.7	19.7	19.9	19.9	20.4	20.4	72
80	-	-	-	-	-	-	16.5	16.5	17.0	17.0	17.0	17.0	80
88	-	-	-	-	-	-	13.8	13.8	14.2	14.2	14.4	14.4	88
96	-	-	-	-	-	-	11.7	11.7	11.9	11.9	12.1	12.1	96
104	-	-	-	-	-	-	9.9	9.9	10.1	10.1	10.2	10.2	104
112	-	-	-	-	-	-	8.3	8.3	8.5	8.5	-	-	112
120	-	-	-	-	-	-	6.8	6.8	7.0	7.0	-	-	120
128	-	-	-	-	-	-	5.7	5.7	-	-	-	-	128

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
48	32.7	27.8	-	-	-	-	-	-	-	-	-	48	
56	26.7	24.3	27.4	25.5	28.3	24.0	24.3	21.9	24.8	-	-	56	
64	21.8	20.8	21.8	21.3	22.7	21.6	20.1	19.1	21.0	19.9	21.7	20.7	64
72	17.3	17.3	18.2	18.1	18.6	18.6	16.2	15.5	17.1	16.4	17.7	17.1	72
80	14.1	14.1	14.7	14.7	15.2	15.2	13.0	12.6	13.6	13.5	14.3	14.1	80
88	11.3	11.3	12.0	12.0	12.4	12.4	10.1	10.1	10.9	10.9	11.5	11.5	88
96	9.0	9.0	9.6	9.6	10.0	10.0	7.7	7.7	8.6	8.6	9.1	9.1	96
104	6.9	6.9	7.5	7.5	7.8	7.8	5.9	5.9	6.4	6.4	6.9	6.9	104
112	5.2	5.2	5.6	5.6	6.1	6.1	4.1	4.1	4.8	4.8	5.0	5.0	112
120	3.7	3.7	4.1	4.1	4.5	4.5	-	-	3.2	3.2	3.4	3.4	120
128	-	-	2.9	2.9	3.1	3.1	-	-	-	-	-	-	128

Operation










HAV-HY






55,100 lb +  33,100 lb		 36.1 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
10		72.7	59.8	-	-	-	-	-	-	-	-	10
12		69.1	57.4	-	-	-	-	-	-	-	-	12
14		65.8	55.3	-	-	-	-	-	-	-	-	14
16		62.8	53.1	-	-	-	-	-	-	-	-	16
18		60.0	51.2	-	-	-	-	-	-	-	-	18
20		57.4	49.3	44.3	-	-	-	-	-	-	-	20
24		52.7	45.9	41.2	37.6	-	-	-	-	-	-	24
28		48.7	42.9	38.7	35.4	-	-	-	-	-	-	28
32		45.2	40.2	36.6	33.6	28.2	26.3	46.1	39.7	-	-	32
36		42.1	37.9	34.7	32.1	27.0	25.4	44.7	38.6	-	-	36
40		39.1	35.7	32.8	30.7	25.8	24.6	42.9	37.5	35.3	-	40
48		34.5	32.3	29.6	28.3	23.3	23.0	36.2	34.1	33.4	28.8	48
56		30.6	29.5	26.5	26.2	21.7	21.7	29.1	28.9	29.7	27.5	56
64		25.9	25.8	24.2	24.2	-	-	23.7	23.6	24.8	24.0	64
72		-	-	-	-	-	-	19.9	19.9	20.3	20.2	72
80		-	-	-	-	-	-	16.8	16.8	17.3	16.8	80
88		-	-	-	-	-	-	14.4	14.4	14.5	14.5	88
96		-	-	-	-	-	-	12.3	12.3	12.8	12.8	96
104		-	-	-	-	-	-	10.4	10.4	10.8	10.8	104
112		-	-	-	-	-	-	8.9	8.9	9.4	9.4	112
120		-	-	-	-	-	-	7.4	7.4	8.1	8.1	120
128		-	-	-	-	-	-	6.2	6.2	6.7	6.7	128
136		-	-	-	-	-	-	5.1	5.1	5.5	5.5	136
144		-	-	-	-	-	-	4.2	4.2	4.5	4.5	144

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
56		24.7	21.4	-	-	-	-	20.5	16.8	-	-	56
64		21.2	19.4	19.1	-	-	-	19.5	16.8	-	-	64
72		17.9	17.0	19.0	17.9	-	-	16.2	15.3	17.7	-	72
80		14.5	14.2	15.5	15.4	16.7	16.3	12.8	12.6	14.7	14.3	80
88		11.8	11.8	13.2	13.2	13.8	13.8	10.0	10.0	11.8	11.8	88
96		9.5	9.5	10.8	10.8	11.8	11.8	7.8	7.8	9.3	9.3	96
104		7.5	7.5	8.6	8.6	9.7	9.7	6.0	6.0	7.3	7.3	104
112		5.9	5.9	7.0	7.0	7.8	7.8	4.3	4.3	5.6	5.6	112
120		4.5	4.5	5.4	5.4	6.1	6.1	3.1	3.1	4.1	4.1	120
128		3.2	3.2	4.1	4.1	4.6	4.6	-	-	2.9	2.9	128
136		-	-	2.7	2.7	3.3	3.3	-	-	-	-	136

Operation










HAV-HY






55,100 lb +  33,100 lb		 55.8 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
14		44.5	37.4	-	-	-	-	-	-	-	-	14
16		43.0	36.4	-	-	-	-	-	-	-	-	16
18		41.6	35.3	-	-	-	-	-	-	-	-	18
20		40.1	34.2	-	-	-	-	-	-	-	-	20
24		37.4	32.1	-	-	-	-	-	-	-	-	24
28		34.9	30.3	-	-	-	-	-	-	-	-	28
32		32.6	28.5	25.5	-	-	-	-	-	-	-	32
36		30.6	27.0	24.1	21.8	-	-	30.0	24.8	-	-	36
40		28.6	25.6	22.8	20.8	-	-	29.2	24.1	-	-	40
48		25.5	23.3	20.7	19.0	16.3	15.8	27.6	22.9	-	-	48
56		23.0	21.2	18.9	17.5	14.6	14.6	26.0	21.8	20.6	18.4	56
64		20.7	19.3	17.3	16.3	13.4	13.4	22.8	20.7	19.4	17.6	64
72		18.6	17.9	15.7	15.2	12.6	12.6	19.7	19.4	18.5	16.8	72
80		16.7	16.7	14.4	14.4	-	-	16.3	16.3	17.4	16.0	80
88		-	-	-	-	-	-	14.2	14.3	15.2	14.9	88
96		-	-	-	-	-	-	12.3	12.3	12.8	12.9	96
104		-	-	-	-	-	-	10.8	10.8	11.2	11.3	104
112		-	-	-	-	-	-	9.2	9.2	9.9	9.9	112
120		-	-	-	-	-	-	8.1	8.1	8.7	8.7	120
128		-	-	-	-	-	-	6.8	6.8	7.4	7.4	128
136		-	-	-	-	-	-	5.8	5.8	6.4	6.4	136
144		-	-	-	-	-	-	4.7	4.7	5.3	5.3	144
152		-	-	-	-	-	-	3.9	3.9	4.3	4.3	152
160		-	-	-	-	-	-	3.1	3.1	3.5	3.5	160

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
56		18.6	15.7	-	-	-	-	-	-	-	-	56
64		18.2	15.7	-	-	-	-	15.7	12.3	-	-	64
72		16.8	15.7	-	-	-	-	15.2	12.3	-	-	72
80		14.3	13.8	15.4	14.0	-	-	12.6	12.0	14.2	-	80
88		11.8	11.8	13.4	13.0	12.6	12.0	10.0	10.0	12.5	11.9	88
96		9.5	9.5	11.3	11.3	12.1	11.8	7.8	7.8	10.1	10.1	96
104		7.5	7.5	9.5	9.5	10.6	10.6	6.0	6.0	8.2	8.2	104
112		6.1	6.1	7.6	7.6	9.4	9.4	4.6	4.6	6.3	6.3	112
120		4.8	4.8	6.3	6.3	7.6	7.6	3.3	3.3	5.0	5.0	120
128		3.5	3.5	5.0	5.0	6.3	6.3	-	-	3.7	3.7	128
136		2.6	2.6	3.8	3.8	4.9	4.9	-	-	2.7	2.7	136
144		-	-	2.9	2.9	3.6	3.6	-	-	-	-	144

Operation










HAV-HY






55,100 lb +  33,100 lb		 75.5 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
18	27.7	-	-	-	-	-	-	-	-	-	-	18	
20	27.0	23.3	-	-	-	-	-	-	-	-	-	20	
24	25.9	22.2	-	-	-	-	-	-	-	-	-	24	
28	24.5	21.1	-	-	-	-	-	-	-	-	-	28	
32	23.4	20.2	-	-	-	-	-	-	-	-	-	32	
36	22.2	19.3	-	-	-	-	-	-	-	-	-	36	
40	21.0	18.4	17.9	-	-	-	19.5	17.1	-	-	-	40	
48	18.9	16.8	16.2	14.6	-	-	18.5	16.3	-	-	-	48	
56	17.2	15.3	14.8	13.4	-	-	17.7	15.5	-	-	-	56	
64	15.5	14.1	13.7	12.3	10.4	10.3	16.9	14.9	14.3	-	-	64	
72	14.4	13.0	12.6	11.5	9.5	9.5	16.1	14.1	13.5	12.1	-	72	
80	13.1	12.2	11.3	10.9	8.7	8.7	15.2	13.5	12.9	11.6	10.1	9.4	80
88	12.2	11.4	10.4	10.2	8.2	8.2	13.8	12.8	12.2	11.1	9.7	9.2	88
96	11.1	10.6	9.5	9.5	7.8	7.8	12.2	11.7	11.6	10.7	9.2	8.9	96
104	10.1	10.0	8.9	8.9	-	-	10.4	10.3	11.1	10.2	8.9	8.6	104
112	-	-	-	-	-	-	9.2	9.2	9.9	9.8	8.6	8.4	112
120	-	-	-	-	-	-	8.1	8.1	8.7	8.7	8.3	8.1	120
128	-	-	-	-	-	-	6.7	6.7	7.4	7.4	7.9	7.8	128
136	-	-	-	-	-	-	5.9	5.9	6.6	6.6	7.1	7.1	136
144	-	-	-	-	-	-	4.9	4.9	5.6	5.6	6.2	6.2	144
152	-	-	-	-	-	-	4.1	4.1	4.9	4.9	5.2	5.2	152
160	-	-	-	-	-	-	3.3	3.3	3.9	3.9	4.5	4.5	160
168	-	-	-	-	-	-	-	-	3.1	3.1	-	-	168
176	-	-	-	-	-	-	-	-	2.3	2.3	-	-	176

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
64	12.8	11.0	-	-	-	-	-	-	-	-	-	64	
72	12.4	11.0	-	-	-	-	11.2	8.8	-	-	-	72	
80	11.9	11.0	-	-	-	-	10.8	8.8	-	-	-	80	
88	11.0	10.3	10.5	9.6	-	-	9.2	8.5	-	-	-	88	
96	8.8	8.8	10.2	9.3	-	-	7.2	7.2	9.6	8.7	-	96	
104	7.0	7.0	9.4	8.9	8.6	-	5.5	5.5	8.2	8.0	-	104	
112	5.4	5.4	7.8	7.8	8.4	7.7	3.9	3.9	6.5	6.5	7.9	7.3	112
120	4.2	4.2	6.3	6.3	7.8	7.4	-	-	5.0	5.0	7.2	7.0	120
128	3.1	3.1	5.0	5.0	6.7	6.6	-	-	3.7	3.7	5.8	5.8	128
136	-	-	3.8	3.8	5.5	5.5	-	-	2.7	2.7	4.5	4.5	136
144	-	-	2.9	2.9	4.5	4.5	-	-	-	-	3.4	3.4	144
152	-	-	-	-	3.4	3.4	-	-	-	-	-	-	152

Operation










HAV-HY






33,100 lb +  33,100 lb		 16.4 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
10	119.2	105.7	89.2	-	-	-	-	-	-	-	-	10	
12	113.1	101.2	85.9	80.0	-	-	-	-	-	-	-	12	
14	107.3	97.2	82.9	77.5	-	-	-	-	-	-	-	14	
16	102.0	93.4	80.1	75.4	65.7	61.8	-	-	-	-	-	16	
18	97.4	90.0	77.8	73.4	64.4	60.7	-	-	-	-	-	18	
20	93.1	86.8	75.5	71.4	63.1	59.6	-	-	-	-	-	20	
24	84.5	81.1	71.6	68.0	60.2	57.9	-	-	-	-	-	24	
28	70.7	70.7	67.6	65.3	57.2	56.3	60.2	53.8	-	-	-	28	
32	56.7	56.7	58.3	57.9	54.9	54.1	51.7	47.3	52.1	46.5	-	32	
36	47.6	47.6	48.8	48.8	48.4	48.0	45.0	42.0	46.3	42.6	47.0	39.6	36
40	39.7	39.7	40.6	40.6	-	-	39.7	37.9	40.3	38.4	41.6	38.6	40
48	-	-	-	-	-	-	30.4	30.1	30.8	30.7	31.6	31.3	48
56	-	-	-	-	-	-	23.9	23.9	24.7	24.7	24.9	24.8	56
64	-	-	-	-	-	-	18.9	18.9	19.5	19.5	20.1	20.1	64
72	-	-	-	-	-	-	15.1	15.1	15.7	15.7	16.2	16.2	72
80	-	-	-	-	-	-	12.4	12.4	12.8	12.8	13.1	13.1	80
88	-	-	-	-	-	-	10.1	10.1	10.5	10.5	10.7	10.7	88
96	-	-	-	-	-	-	8.1	8.1	8.5	8.5	8.7	8.7	96
104	-	-	-	-	-	-	6.4	6.4	6.6	6.6	6.8	6.8	104
112	-	-	-	-	-	-	5.0	5.0	5.2	5.2	-	-	112
120	-	-	-	-	-	-	3.7	3.7	3.9	3.9	-	-	120
128	-	-	-	-	-	-	2.8	2.8	-	-	-	-	128

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
48	25.6	23.6	-	-	-	-	-	-	-	-	-	48	
56	20.0	18.8	21.1	19.9	22.2	20.9	17.8	16.9	19.0	-	-	56	
64	15.6	15.0	16.7	16.0	17.6	16.7	13.8	13.2	14.7	14.2	15.6	15.1	64
72	12.2	12.0	13.1	12.6	13.8	13.3	10.4	10.2	11.3	11.1	12.0	11.8	72
80	9.3	9.3	10.2	10.0	10.8	10.6	7.8	7.8	8.4	8.4	9.3	9.3	80
88	7.0	7.0	7.7	7.7	8.3	8.3	5.4	5.4	6.1	6.1	6.8	6.8	88
96	5.0	5.0	5.6	5.6	6.2	6.2	3.6	3.6	4.2	4.2	4.8	4.8	96
104	3.3	3.3	3.9	3.9	4.2	4.2	-	-	2.6	2.6	3.1	3.1	104

Operation










HAV-HY






33,100 lb +  33,100 lb		 36.1 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
10		72.7	59.8	-	-	-	-	-	-	-	-	10
12		69.1	57.4	-	-	-	-	-	-	-	-	12
14		65.8	55.3	-	-	-	-	-	-	-	-	14
16		62.8	53.1	-	-	-	-	-	-	-	-	16
18		60.0	51.2	-	-	-	-	-	-	-	-	18
20		57.4	49.3	44.3	-	-	-	-	-	-	-	20
24		52.7	45.9	41.2	37.6	-	-	-	-	-	-	24
28		48.7	42.9	38.7	35.4	-	-	-	-	-	-	28
32		45.2	40.2	36.6	33.6	28.2	26.3	46.1	39.7	-	-	32
36		42.1	37.9	34.7	32.1	27.0	25.4	42.1	37.2	-	-	36
40		39.0	35.7	32.8	30.7	25.8	24.6	38.5	35.4	35.3	-	40
48		32.4	31.5	29.6	28.3	23.3	23.0	30.6	29.2	31.5	28.3	48
56		25.4	25.4	25.8	25.5	21.7	21.7	24.3	24.1	25.2	24.5	56
64		20.5	20.5	21.0	21.0	-	-	19.7	19.7	20.2	20.1	64
72		-	-	-	-	-	-	16.0	16.0	17.0	17.0	72
80		-	-	-	-	-	-	13.1	13.1	14.1	14.1	80
88		-	-	-	-	-	-	10.7	10.7	11.6	11.6	88
96		-	-	-	-	-	-	8.9	8.9	9.6	9.6	96
104		-	-	-	-	-	-	7.1	7.1	7.9	7.9	104
112		-	-	-	-	-	-	5.7	5.7	6.3	6.3	112
120		-	-	-	-	-	-	4.4	4.4	5.0	5.0	120
128		-	-	-	-	-	-	3.3	3.3	3.7	3.7	128
136		-	-	-	-	-	-	2.4	2.4	2.8	2.8	136

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
56		20.0	18.5	-	-	-	-	18.1	15.8	-	-	56
64		15.8	14.8	18.0	-	-	-	13.8	13.0	-	-	64
72		12.2	11.7	14.2	13.5	-	-	10.4	10.2	12.4	-	72
80		9.3	9.3	11.0	10.9	12.8	12.4	7.6	7.6	9.5	9.5	80
88		7.0	7.0	8.5	8.5	10.0	10.0	5.3	5.3	7.0	7.0	88
96		5.1	5.1	6.5	6.5	7.7	7.7	3.6	3.6	5.0	5.0	96
104		3.5	3.5	4.8	4.8	5.9	5.9	-	-	3.5	3.5	104
112		-	-	3.5	3.5	4.3	4.3	-	-	-	-	112
120		-	-	-	-	3.0	3.0	-	-	-	-	120

Operation










HAV-HY






33,100 lb +  33,100 lb		 55.8 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
14		44.5	37.4	-	-	-	-	-	-	-	-	14
16		43.0	36.4	-	-	-	-	-	-	-	-	16
18		41.6	35.3	-	-	-	-	-	-	-	-	18
20		40.1	34.2	-	-	-	-	-	-	-	-	20
24		37.4	32.1	-	-	-	-	-	-	-	-	24
28		34.9	30.3	-	-	-	-	-	-	-	-	28
32		32.6	28.5	25.5	-	-	-	-	-	-	-	32
36		30.6	27.0	24.1	21.8	-	-	30.0	24.8	-	-	36
40		28.6	25.6	22.8	20.8	-	-	29.2	24.1	-	-	40
48		25.5	23.3	20.7	19.0	16.3	15.8	27.0	22.9	-	-	48
56		23.0	21.2	18.9	17.5	14.6	14.6	23.2	21.2	20.6	18.4	56
64		20.7	19.3	17.3	16.3	13.4	13.4	19.4	18.8	19.4	17.6	64
72		18.1	17.9	15.7	15.2	12.6	12.6	16.4	16.4	17.4	16.6	72
80		15.3	15.3	14.4	14.4	-	-	13.7	13.7	14.6	14.6	80
88		-	-	-	-	-	-	11.4	11.4	12.6	12.5	88
96		-	-	-	-	-	-	9.5	9.5	10.7	10.7	96
104		-	-	-	-	-	-	7.9	7.9	9.0	9.0	104
112		-	-	-	-	-	-	6.3	6.3	7.4	7.4	112
120		-	-	-	-	-	-	5.2	5.2	6.1	6.1	120
128		-	-	-	-	-	-	4.0	4.0	4.8	4.8	128
136		-	-	-	-	-	-	3.0	3.0	3.8	3.8	136
144		-	-	-	-	-	-	-	-	2.9	2.9	144

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
56		18.0	15.7	-	-	-	-	-	-	-	-	56
64		15.4	14.4	-	-	-	-	13.5	12.3	-	-	64
72		12.0	11.7	-	-	-	-	10.2	10.2	-	-	72
80		9.1	9.1	11.9	11.7	-	-	7.6	7.6	10.4	-	80
88		7.0	7.0	9.4	9.4	11.3	11.3	5.3	5.3	7.9	7.9	88
96		5.1	5.1	7.4	7.4	9.2	9.2	3.6	3.6	5.9	5.9	96
104		3.7	3.7	5.5	5.5	7.3	7.3	-	-	4.2	4.2	104
112		-	-	4.1	4.1	5.7	5.7	-	-	-	-	112
120		-	-	2.8	2.8	4.3	4.3	-	-	-	-	120
128		-	-	-	-	3.1	3.1	-	-	-	-	128

Operation














HAV-HY










33,100 lb +  33,100 lb		 75.5 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
18		27.7	-	-	-	-	-	-	-	-	-	18
20		27.0	23.3	-	-	-	-	-	-	-	-	20
24		25.9	22.2	-	-	-	-	-	-	-	-	24
28		24.5	21.1	-	-	-	-	-	-	-	-	28
32		23.4	20.2	-	-	-	-	-	-	-	-	32
36		22.2	19.3	-	-	-	-	-	-	-	-	36
40		21.0	18.4	17.9	-	-	-	19.5	17.1	-	-	40
48		18.9	16.8	16.2	14.6	-	-	18.5	16.3	-	-	48
56		17.2	15.3	14.8	13.4	-	-	17.7	15.5	-	-	56
64		15.5	14.1	13.7	12.3	10.4	10.3	16.8	14.9	14.3	-	64
72		14.4	13.0	12.6	11.5	9.5	9.5	15.5	13.9	13.5	12.1	72
80		13.1	12.2	11.3	10.9	8.7	8.7	13.4	12.8	12.9	11.6	80
88		12.2	11.4	10.4	10.2	8.2	8.2	11.6	11.6	11.9	11.1	88
96		11.1	10.6	9.5	9.5	7.8	7.8	9.6	9.6	10.7	10.3	96
104		10.1	10.0	8.9	8.9	-	-	7.9	7.9	9.4	9.4	104
112		-	-	-	-	-	-	6.5	6.5	8.1	8.1	112
120		-	-	-	-	-	-	5.3	5.3	6.7	6.7	120
128		-	-	-	-	-	-	4.2	4.2	5.5	5.5	128
136		-	-	-	-	-	-	3.3	3.3	4.4	4.4	136
144		-	-	-	-	-	-	2.5	2.5	3.4	3.4	144
152		-	-	-	-	-	-	-	-	-	-	152

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
64		12.8	11.0	-	-	-	-	-	-	-	-	64
72		11.1	10.8	-	-	-	-	9.1	8.8	-	-	72
80		8.4	8.4	-	-	-	-	6.7	6.7	-	-	80
88		6.2	6.2	9.4	9.0	-	-	4.7	4.7	-	-	88
96		4.5	4.5	7.4	7.4	-	-	2.9	2.9	5.9	5.9	96
104		3.0	3.0	5.7	5.7	8.0	-	-	-	4.2	4.2	104
112		-	-	4.1	4.1	6.3	6.3	-	-	-	-	112
120		-	-	2.8	2.8	5.0	5.0	-	-	-	-	120
128		-	-	-	-	3.7	3.7	-	-	-	-	128
136		-	-	-	-	2.7	2.7	-	-	-	-	136

Operation










HAV-HY






11,000 lb +  33,100 lb		 16.4 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5			
 42.3 ft						 126.0 ft							
													
	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°			
ft	0°		18°		36°		0°		18°		36°		ft
1,000 lb													
10	119.2	105.7	89.2	-	-	-	-	-	-	-	-	-	10
12	113.1	101.2	85.9	80.0	-	-	-	-	-	-	-	-	12
14	107.3	97.2	82.9	77.5	-	-	-	-	-	-	-	-	14
16	102.0	93.4	80.1	75.4	65.7	61.8	-	-	-	-	-	-	16
18	97.4	90.0	77.8	73.4	64.4	60.7	-	-	-	-	-	-	18
20	92.2	86.4	75.5	71.4	63.1	59.6	-	-	-	-	-	-	20
24	72.5	72.5	69.8	67.2	60.2	57.9	-	-	-	-	-	-	24
28	55.5	55.5	57.5	57.5	55.8	55.2	48.8	44.2	-	-	-	-	28
32	44.1	44.1	45.5	45.5	46.8	46.8	42.4	38.0	42.6	36.9	-	-	32
36	36.6	36.6	37.7	37.7	38.6	38.6	36.8	33.3	37.5	34.8	38.4	33.6	36
40	30.2	30.2	31.0	31.0	-	-	31.7	29.0	33.0	30.3	33.9	31.6	40
48	-	-	-	-	-	-	23.2	22.6	24.3	23.7	25.1	24.6	48
56	-	-	-	-	-	-	17.5	17.5	18.4	18.4	18.9	18.9	56
64	-	-	-	-	-	-	13.5	13.5	14.2	14.2	14.6	14.6	64
72	-	-	-	-	-	-	10.4	10.4	10.9	10.9	11.3	11.3	72
80	-	-	-	-	-	-	8.0	8.0	8.5	8.5	8.9	8.9	80
88	-	-	-	-	-	-	6.0	6.0	6.4	6.4	6.6	6.6	88
96	-	-	-	-	-	-	4.2	4.2	4.7	4.7	4.9	4.9	96
104	-	-	-	-	-	-	2.8	2.8	3.1	3.1	3.3	3.3	104

 181.1 ft						 196.9 ft							
													
	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
ft	0°		18°		36°		0°		18°		36°		ft
1,000 lb													
48	17.3	16.1	-	-	-	-	-	-	-	-	-	-	48
56	12.8	12.1	13.9	13.2	14.9	14.2	10.7	10.4	11.9	-	-	-	56
64	9.3	9.0	10.2	10.1	11.1	10.8	7.4	7.4	8.4	8.3	9.3	9.2	64
72	6.5	6.4	7.3	7.3	8.0	8.0	4.7	4.7	5.6	5.6	6.2	6.2	72
80	4.1	4.1	5.0	5.0	5.4	5.4	-	-	-	-	3.9	3.9	80
88	-	-	-	-	3.6	3.6	-	-	-	-	-	-	88

Operation










HAV-HY






11,000 lb +  33,100 lb		 36.1 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
10		72.7	59.8	-	-	-	-	-	-	-	-	10
12		69.1	57.4	-	-	-	-	-	-	-	-	12
14		65.8	55.3	-	-	-	-	-	-	-	-	14
16		62.8	53.1	-	-	-	-	-	-	-	-	16
18		60.0	51.2	-	-	-	-	-	-	-	-	18
20		57.4	49.3	44.3	-	-	-	-	-	-	-	20
24		52.7	45.9	41.2	37.6	-	-	-	-	-	-	24
28		48.7	42.9	38.7	35.4	-	-	-	-	-	-	28
32		45.2	40.2	36.6	33.6	28.2	26.3	39.9	33.9	-	-	32
36		39.4	36.9	34.7	32.1	27.0	25.4	35.5	32.1	-	-	36
40		33.2	33.2	32.6	30.6	25.8	24.6	31.4	28.4	30.5	-	40
48		24.8	24.8	26.3	26.3	23.3	23.0	24.1	22.3	25.3	24.0	48
56		19.0	19.0	20.1	20.1	20.5	20.5	18.4	17.9	20.1	19.7	56
64		15.0	15.0	15.6	15.6	-	-	14.2	14.2	15.8	15.8	64
72		-	-	-	-	-	-	11.1	11.1	12.4	12.4	72
80		-	-	-	-	-	-	8.7	8.7	9.8	9.8	80
88		-	-	-	-	-	-	6.6	6.6	7.7	7.7	88
96		-	-	-	-	-	-	5.0	5.0	6.0	6.0	96
104		-	-	-	-	-	-	3.5	3.5	4.4	4.4	104
112		-	-	-	-	-	-	-	-	-	-	112

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
56		12.9	12.0	-	-	-	-	10.9	10.3	-	-	56
64		9.3	9.1	11.5	-	-	-	7.3	7.2	-	-	64
72		6.2	6.2	8.4	8.4	-	-	4.5	4.5	6.7	-	72
80		4.1	4.1	5.8	5.8	7.6	7.6	-	-	4.3	-	80
88		-	-	3.9	3.9	5.3	5.3	-	-	-	-	88
96		-	-	-	-	3.6	3.6	-	-	-	-	96

Operation

HAV-HY

11,000 lb +  33,100 lb		 55.8 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
14	44.5	37.4	-	-	-	-	-	-	-	-	-	14	
16	43.0	36.4	-	-	-	-	-	-	-	-	-	16	
18	41.6	35.3	-	-	-	-	-	-	-	-	-	18	
20	40.1	34.2	-	-	-	-	-	-	-	-	-	20	
24	37.4	32.1	-	-	-	-	-	-	-	-	-	24	
28	34.9	30.3	-	-	-	-	-	-	-	-	-	28	
32	32.6	28.5	25.5	-	-	-	-	-	-	-	-	32	
36	30.6	27.0	24.1	21.8	-	-	28.8	24.6	-	-	-	36	
40	28.6	25.6	22.8	20.8	-	-	27.1	23.6	-	-	-	40	
48	25.1	23.3	20.7	19.0	16.3	15.8	23.6	20.9	-	-	-	48	
56	20.6	20.3	18.9	17.5	14.6	14.6	19.1	17.8	19.7	17.9	-	56	
64	16.4	16.4	17.3	16.3	13.4	13.4	14.9	14.3	16.6	16.4	-	64	
72	13.5	13.5	14.4	14.4	12.6	12.6	11.7	11.7	13.7	13.7	14.6	13.9	72
80	11.2	11.2	11.8	11.8	-	-	9.2	9.2	11.1	11.1	12.4	12.4	80
88	-	-	-	-	-	-	7.3	7.3	9.1	9.1	10.2	10.2	88
96	-	-	-	-	-	-	5.7	5.7	7.3	7.3	8.3	8.3	96
104	-	-	-	-	-	-	4.4	4.4	5.7	5.7	6.6	6.6	104
112	-	-	-	-	-	-	3.0	3.0	4.3	4.3	5.2	5.2	112
120	-	-	-	-	-	-	-	-	3.1	3.1	3.9	3.9	120
128	-	-	-	-	-	-	-	-	-	-	2.6	2.6	128

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
56	12.7	11.9	-	-	-	-	-	-	-	-	-	56
64	9.0	9.0	-	-	-	-	7.0	7.0	-	-	-	64
72	6.2	6.2	-	-	-	-	4.5	4.5	-	-	-	72
80	4.1	4.1	6.7	6.7	-	-	-	-	-	-	-	80
88	-	-	4.7	4.7	7.0	7.0	-	-	-	-	-	88
96	-	-	3.1	3.1	5.0	5.0	-	-	-	-	-	96
104	-	-	-	-	3.5	3.5	-	-	-	-	-	104

Operation










HAV-HY






								360°		ASME B30.5		
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
18		27.7	-	-	-	-	-	-	-	-	-	18
20		27.0	23.3	-	-	-	-	-	-	-	-	20
24		25.9	22.2	-	-	-	-	-	-	-	-	24
28		24.5	21.1	-	-	-	-	-	-	-	-	28
32		23.4	20.2	-	-	-	-	-	-	-	-	32
36		22.2	19.3	-	-	-	-	-	-	-	-	36
40		21.0	18.4	17.9	-	-	-	19.5	17.1	-	-	40
48		18.9	16.8	16.2	14.6	-	-	18.3	16.3	-	-	48
56		17.2	15.3	14.8	13.4	-	-	16.5	15.1	-	-	56
64		15.5	14.1	13.7	12.3	10.4	10.3	14.0	13.6	14.3	-	64
72		14.1	13.0	12.6	11.5	9.5	9.5	11.1	11.1	13.2	11.9	72
80		11.8	11.8	11.3	10.9	8.7	8.7	8.7	8.7	11.3	10.9	80
88		9.8	9.8	10.4	10.2	8.2	8.2	6.9	6.9	9.2	9.2	88
96		8.3	8.3	9.1	9.1	7.8	7.8	5.3	5.3	7.3	7.3	96
104		7.2	7.2	7.5	7.5	-	-	3.9	3.9	5.9	5.9	104
112		-	-	-	-	-	-	-	-	4.6	4.6	112
120		-	-	-	-	-	-	-	-	3.5	3.5	120
128		-	-	-	-	-	-	-	-	-	-	128
136		-	-	-	-	-	-	-	-	-	-	136

		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
64		7.9	7.9	-	-	-	-	-	-	-	-	64
72		5.3	5.3	-	-	-	-	-	-	-	-	72

Operation










HAV-HY



0 lb +  33,100 lb		 16.4 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
10	119.2	105.7	89.2	-	-	-	-	-	-	-	-	10	
12	113.1	101.2	85.9	80.0	-	-	-	-	-	-	-	12	
14	107.3	97.2	82.9	77.5	-	-	-	-	-	-	-	14	
16	102.0	93.4	80.1	75.4	65.7	61.8	-	-	-	-	-	16	
18	95.6	88.3	77.8	73.4	64.4	60.7	-	-	-	-	-	18	
20	87.8	82.2	75.3	71.4	63.1	59.6	-	-	-	-	-	20	
24	62.9	62.9	65.7	64.6	59.9	57.9	-	-	-	-	-	24	
28	47.8	47.8	49.9	49.9	51.6	51.4	42.7	37.6	-	-	-	28	
32	37.7	37.7	39.3	39.3	40.5	40.5	36.2	32.3	38.1	31.0	-	32	
36	31.1	31.1	32.4	32.4	33.2	33.2	31.2	28.1	32.8	29.5	34.3	28.3	36
40	25.4	25.4	26.4	26.4	-	-	26.5	24.2	28.0	25.5	29.3	26.8	40
48	-	-	-	-	-	-	19.5	18.7	20.5	19.7	21.3	20.7	48
56	-	-	-	-	-	-	14.4	14.3	15.3	15.2	15.9	15.9	56
64	-	-	-	-	-	-	10.8	10.8	11.5	11.5	12.0	12.0	64
72	-	-	-	-	-	-	8.0	8.0	8.7	8.7	9.1	9.1	72
80	-	-	-	-	-	-	5.7	5.7	6.1	6.1	6.5	6.5	80
88	-	-	-	-	-	-	3.9	3.9	4.2	4.2	4.5	4.5	88
96	-	-	-	-	-	-	-	-	2.6	2.6	2.9	2.9	96

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
48	13.1	12.5	-	-	-	-	-	-	-	-	-	48
56	9.1	8.9	10.3	10.0	11.2	10.8	-	-	-	-	-	56
64	6.1	6.1	7.0	7.0	7.9	7.8	-	-	-	-	-	64
72	3.6	3.6	4.2	4.2	5.1	5.1	-	-	-	-	-	72

Operation










HAV-HY






0 lb +  33,100 lb		 36.1 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
10		72.7	59.8	-	-	-	-	-	-	-	-	10
12		69.1	57.4	-	-	-	-	-	-	-	-	12
14		65.8	55.3	-	-	-	-	-	-	-	-	14
16		62.8	53.1	-	-	-	-	-	-	-	-	16
18		60.0	51.2	-	-	-	-	-	-	-	-	18
20		57.4	49.3	44.3	-	-	-	-	-	-	-	20
24		52.7	45.9	41.2	37.6	-	-	-	-	-	-	24
28		48.4	42.9	38.7	35.4	-	-	-	-	-	-	28
32		41.1	39.9	36.6	33.6	28.2	26.3	34.6	28.3	-	-	32
36		34.3	34.3	33.8	32.1	27.0	25.4	30.6	27.2	-	-	36
40		28.5	28.5	30.6	30.2	25.8	24.6	26.4	23.6	27.4	-	40
48		21.0	21.0	22.6	22.6	22.6	22.3	20.1	18.4	22.4	20.6	48
56		16.0	16.0	17.0	17.0	17.8	17.8	15.3	14.3	17.0	16.3	56
64		12.3	12.3	13.1	13.1	-	-	11.7	11.2	13.1	12.9	64
72		-	-	-	-	-	-	8.7	8.7	10.0	10.0	72
80		-	-	-	-	-	-	6.5	6.5	7.8	7.8	80
88		-	-	-	-	-	-	4.7	4.7	5.8	5.8	88
96		-	-	-	-	-	-	3.1	3.1	4.0	4.0	96
104		-	-	-	-	-	-	-	-	2.6	2.6	104










		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
56		9.4	8.8	-	-	-	-	-	-	-	-	56
64		5.9	5.9	8.4	-	-	-	-	-	-	-	64
72		3.4	3.4	5.6	-	-	-	-	-	-	-	72

Operation

HAV-HY










0 lb +  33,100 lb		 55.8 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
14	44.5	37.4	-	-	-	-	-	-	-	-	-	14	
16	43.0	36.4	-	-	-	-	-	-	-	-	-	16	
18	41.6	35.3	-	-	-	-	-	-	-	-	-	18	
20	40.1	34.2	-	-	-	-	-	-	-	-	-	20	
24	37.4	32.1	-	-	-	-	-	-	-	-	-	24	
28	34.9	30.3	-	-	-	-	-	-	-	-	-	28	
32	32.6	28.5	25.5	-	-	-	-	-	-	-	-	32	
36	30.6	27.0	24.1	21.8	-	-	26.6	22.7	-	-	-	36	
40	28.4	25.6	22.8	20.8	-	-	25.5	22.3	-	-	-	40	
48	22.7	22.4	20.7	19.0	16.3	15.8	20.1	18.1	-	-	-	48	
56	17.5	17.5	18.4	17.5	14.6	14.6	15.3	14.3	17.8	16.5	-	56	
64	13.9	13.9	15.3	15.1	13.4	13.4	11.7	11.3	14.4	13.7	-	64	
72	11.1	11.1	12.2	12.2	12.6	12.6	8.9	8.9	11.1	11.1	13.0	12.8	72
80	9.0	9.0	9.8	9.8	-	-	6.8	6.8	8.7	8.7	10.4	10.4	80
88	-	-	-	-	-	-	5.0	5.0	6.7	6.7	8.3	8.3	88
96	-	-	-	-	-	-	3.5	3.5	5.1	5.1	6.5	6.5	96
104	-	-	-	-	-	-	2.3	2.3	3.7	3.7	5.0	5.0	104
112	-	-	-	-	-	-	-	-	-	-	3.5	3.5	112






		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
56	8.9	8.7	-	-	-	-	-	-	-	-	-	56
64	5.7	5.7	-	-	-	-	-	-	-	-	-	64
72	3.4	3.4	-	-	-	-	-	-	-	-	-	72

0 lb +  33,100 lb		 75.5 ft		 15.6 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		18°			36°
ft		1,000 lb										ft	
18	27.7	-	-	-	-	-	-	-	-	-	-	18	
20	27.0	23.3	-	-	-	-	-	-	-	-	-	20	
24	25.9	22.2	-	-	-	-	-	-	-	-	-	24	
28	24.5	21.1	-	-	-	-	-	-	-	-	-	28	
32	23.4	20.2	-	-	-	-	-	-	-	-	-	32	
36	22.2	19.3	-	-	-	-	-	-	-	-	-	36	
40	21.0	18.4	17.9	-	-	-	19.3	17.0	-	-	-	40	
48	18.9	16.8	16.2	14.6	-	-	17.2	15.4	-	-	-	48	
56	17.2	15.3	14.8	13.4	-	-	14.4	13.7	-	-	-	56	
64	14.5	14.1	13.7	12.3	10.4	10.3	10.8	10.8	12.1	-	-	64	
72	11.7	11.7	12.6	11.5	9.5	9.5	8.2	8.2	11.3	11.3	-	72	
80	9.7	9.7	10.9	10.7	8.7	8.7	6.1	6.1	8.7	8.7	10.0	9.4	80
88	8.1	8.1	8.9	8.9	8.2	8.2	4.5	4.5	6.9	6.9	9.1	8.7	88
96	6.6	6.6	7.3	7.3	7.7	7.7	3.2	3.2	5.3	5.3	7.3	7.3	96
104	5.6	5.6	5.9	5.9	-	-	-	-	3.9	3.9	5.7	5.7	104
112	-	-	-	-	-	-	-	-	-	-	4.3	4.3	112
120	-	-	-	-	-	-	-	-	-	-	3.3	3.3	120

Operation










HAV-HY






99,200 lb +  33,100 lb		 16.4 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
18	97.4	90.0	-	-	-	-	-	-	-	-	-	18
20	93.1	86.8	-	-	-	-	-	-	-	-	-	20
24	85.8	81.2	71.6	68.0	-	-	-	-	-	-	-	24
28	79.5	76.4	67.6	65.3	57.2	56.3	-	-	-	-	-	28
32	70.7	70.0	63.4	62.4	54.9	54.1	-	-	-	-	-	32
36	60.8	60.8	58.2	57.8	53.1	52.5	-	-	-	-	-	36
40	51.7	51.7	52.5	52.5	-	-	-	-	-	-	-	40
48	-	-	-	-	-	-	39.0	39.0	-	-	-	48
56	-	-	-	-	-	-	30.7	30.7	31.7	31.7	-	56
64	-	-	-	-	-	-	25.6	25.6	25.6	25.6	26.1	64
72	-	-	-	-	-	-	21.7	21.7	22.1	22.1	21.9	72
80	-	-	-	-	-	-	18.3	18.3	18.7	18.7	18.9	80
88	-	-	-	-	-	-	15.4	15.4	15.7	15.7	16.1	88
96	-	-	-	-	-	-	13.4	13.4	13.7	13.6	13.7	96
104	-	-	-	-	-	-	11.5	11.5	11.7	11.7	11.9	104
112	-	-	-	-	-	-	9.8	9.8	10.1	10.1	-	112
120	-	-	-	-	-	-	8.5	8.5	8.7	8.7	-	120
128	-	-	-	-	-	-	7.3	7.3	-	-	-	128

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
72	19.7	18.8	-	-	-	-	-	-	-	-	-	72
80	16.3	16.3	16.6	16.4	16.7	16.7	15.4	15.2	16.1	15.9	16.5	80
88	13.4	13.4	14.0	14.0	14.3	14.3	12.5	12.5	13.2	13.2	13.6	88
96	11.0	11.0	11.5	11.5	11.9	11.9	10.0	10.0	10.7	10.7	11.1	96
104	8.9	8.9	9.5	9.5	9.7	9.7	7.9	7.9	8.4	8.4	8.9	104
112	7.0	7.0	7.6	7.6	7.8	7.8	6.1	6.1	6.5	6.5	7.0	112
120	5.6	5.6	5.9	5.9	6.2	6.2	4.5	4.5	5.0	5.0	5.4	120
128	4.2	4.2	4.5	4.5	4.7	4.7	3.2	3.2	3.6	3.6	3.9	128
136	3.1	3.1	3.3	3.3	3.5	3.5	-	-	-	-	2.5	136
144	-	-	2.3	2.3	2.5	2.5	-	-	-	-	-	144

Operation










HAV-HY






99,200 lb +  33,100 lb		 36.1 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
24		52.7	45.9	-	-	-	-	-	-	-	-	24
28		48.7	42.9	-	-	-	-	-	-	-	-	28
32		45.2	40.2	-	-	-	-	-	-	-	-	32
36		42.1	37.9	34.7	32.1	-	-	-	-	-	-	36
40		39.1	35.7	32.8	30.7	25.8	24.6	-	-	-	-	40
48		34.5	32.3	29.6	28.3	23.3	23.0	-	-	-	-	48
56		31.0	29.5	26.5	26.2	21.7	21.7	30.7	30.5	-	-	56
64		27.6	26.9	24.2	24.2	-	-	25.6	25.6	26.1	25.5	64
72		-	-	-	-	-	-	21.0	21.0	22.3	21.5	72
80		-	-	-	-	-	-	18.3	18.3	18.7	18.3	80
88		-	-	-	-	-	-	15.9	15.9	16.3	15.8	88
96		-	-	-	-	-	-	13.7	13.7	14.0	13.7	96
104		-	-	-	-	-	-	11.7	11.7	12.3	12.3	104
112		-	-	-	-	-	-	10.3	10.3	10.7	10.7	112
120		-	-	-	-	-	-	9.2	9.2	9.2	9.2	120
128		-	-	-	-	-	-	7.8	7.8	7.8	7.8	128
136		-	-	-	-	-	-	6.6	6.6	6.9	6.9	136
144		-	-	-	-	-	-	5.6	5.6	5.8	5.8	144

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
80		16.2	15.7	17.6	17.4	-	-	15.6	15.0	-	-	80
88		13.8	13.7	14.5	14.5	15.5	15.5	12.6	12.5	14.2	14.0	88
96		11.7	11.7	12.4	12.3	13.1	13.1	10.2	10.2	11.8	11.7	96
104		9.5	9.5	10.6	10.6	11.2	11.2	8.2	8.2	9.5	9.5	104
112		7.8	7.8	8.7	8.7	9.6	9.6	6.5	6.5	7.6	7.6	112
120		6.2	6.2	7.1	7.1	7.8	7.8	5.0	5.0	6.1	6.1	120
128		4.7	4.7	5.6	5.6	6.3	6.3	3.7	3.7	4.7	4.7	128
136		3.5	3.5	4.3	4.3	4.9	4.9	2.7	2.7	3.4	3.4	136
144		2.5	2.5	3.1	3.1	3.6	3.6	-	-	2.3	2.3	144

Operation










HAV-HY






99,200 lb +  33,100 lb		 55.8 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
32		32.6	28.5	-	-	-	-	-	-	-	-	32
36		30.6	27.0	-	-	-	-	-	-	-	-	36
40		28.6	25.6	-	-	-	-	-	-	-	-	40
48		25.5	23.3	20.7	19.0	-	-	-	-	-	-	48
56		23.0	21.2	18.9	17.5	-	-	26.0	21.8	-	-	56
64		20.7	19.3	17.3	16.3	13.4	13.4	24.5	20.7	-	-	64
72		18.6	17.9	15.7	15.2	12.6	12.6	21.0	19.6	-	-	72
80		16.7	16.7	14.4	14.4	-	-	17.9	17.7	17.7	16.0	80
88		-	-	-	-	-	-	15.5	15.5	16.3	15.4	88
96		-	-	-	-	-	-	13.2	13.2	14.4	14.0	96
104		-	-	-	-	-	-	11.9	11.9	12.4	12.4	104
112		-	-	-	-	-	-	10.3	10.3	10.7	10.7	112
120		-	-	-	-	-	-	9.4	9.4	9.6	9.6	120
128		-	-	-	-	-	-	8.0	8.0	8.4	8.4	128
136		-	-	-	-	-	-	6.9	6.9	7.5	7.5	136
144		-	-	-	-	-	-	6.0	6.0	6.4	6.4	144
152		-	-	-	-	-	-	5.2	5.2	5.4	5.4	152
160		-	-	-	-	-	-	4.4	4.4	4.8	4.8	160

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
80		16.3	15.1	-	-	-	-	14.5	12.3	-	-	80
88		13.4	13.2	14.4	13.5	-	-	12.6	12.0	-	-	88
96		11.7	11.7	13.1	12.7	-	-	10.4	10.4	12.0	11.7	96
104		9.7	9.7	11.1	11.0	11.5	11.3	8.4	8.4	10.4	10.3	104
112		8.1	8.1	9.4	9.4	10.7	10.7	6.5	6.5	8.5	8.5	112
120		6.7	6.7	8.2	8.2	8.9	8.9	5.2	5.2	7.0	7.0	120
128		5.4	5.4	6.7	6.7	7.7	7.7	4.0	4.0	5.6	5.6	128
136		4.2	4.2	5.5	5.5	6.5	6.5	2.9	2.9	4.4	4.4	136
144		3.3	3.3	4.2	4.2	5.1	5.1	-	-	3.4	3.4	144
152		-	-	3.2	3.2	4.0	4.0	-	-	-	-	152
160		-	-	-	-	3.0	3.0	-	-	-	-	160

Operation

HAV-HY

99,200 lb +  33,100 lb		 75.5 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
36		22.2	19.3	-	-	-	-	-	-	-	-	36
40		21.0	18.4	-	-	-	-	-	-	-	-	40
48		18.9	16.8	-	-	-	-	-	-	-	-	48
56		17.2	15.3	14.8	13.4	-	-	-	-	-	-	56
64		15.5	14.1	13.7	12.3	-	-	16.9	14.9	-	-	64
72		14.4	13.0	12.6	11.5	-	-	16.1	14.1	-	-	72
80		13.1	12.2	11.3	10.9	8.7	8.7	15.3	13.5	12.9	11.6	80
88		12.2	11.4	10.4	10.2	8.2	8.2	14.4	12.8	12.2	11.1	88
96		11.1	10.6	9.5	9.5	7.8	7.8	13.1	12.3	11.6	10.7	96
104		10.1	10.0	8.9	8.9	-	-	11.5	11.4	11.1	10.2	104
112		-	-	-	-	-	-	9.9	9.9	10.7	9.9	112
120		-	-	-	-	-	-	8.8	8.8	9.8	9.3	120
128		-	-	-	-	-	-	7.6	7.6	8.3	8.3	128
136		-	-	-	-	-	-	7.0	7.0	7.4	7.4	136
144		-	-	-	-	-	-	6.0	6.0	6.4	6.4	144
152		-	-	-	-	-	-	5.0	5.0	5.8	5.6	152
160		-	-	-	-	-	-	4.5	4.5	4.8	4.8	160
168		-	-	-	-	-	-	3.9	3.9	4.0	4.0	168
176		-	-	-	-	-	-	3.2	3.2	3.6	3.6	176

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
80		12.1	11.0	-	-	-	-	11.0	8.8	-	-	80
88		11.7	10.7	-	-	-	-	10.7	8.8	-	-	88
96		10.8	10.2	-	-	-	-	9.5	8.8	-	-	96
104		9.3	9.2	10.0	9.1	-	-	7.7	7.7	9.3	8.4	104
112		7.6	7.6	9.2	8.8	8.4	7.7	6.1	6.1	8.5	8.3	112
120		6.1	6.1	7.9	7.7	8.1	7.4	4.8	4.8	7.0	7.0	120
128		4.8	4.8	6.8	6.8	7.7	7.3	3.5	3.5	5.6	5.6	128
136		3.8	3.8	5.6	5.6	6.7	6.6	2.4	2.4	4.4	4.4	136
144		2.9	2.9	4.5	4.5	6.0	6.0	-	-	3.4	3.4	144
152		-	-	3.6	3.6	4.9	4.9	-	-	-	-	152
160		-	-	2.7	2.7	3.9	3.9	-	-	-	-	160

Operation









HAV-HY



77,200 lb + 33,100 lb		16.4 ft		11.5 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
ft	0,3°		1°		0,3°		1°		0,3°		1°		
	0°		18°		36°		0°		18°		36°		
1,000 lb													
10	119.2	105.7	-	-	-	-	-	-	-	-	-	10	
12	113.1	101.2	85.9	80.0	-	-	-	-	-	-	-	12	
14	107.3	97.2	82.9	77.5	-	-	-	-	-	-	-	14	
16	102.0	93.4	80.1	75.4	65.7	61.8	-	-	-	-	-	16	
18	97.4	90.0	77.8	73.4	64.4	60.7	-	-	-	-	-	18	
20	93.1	86.8	75.5	71.4	63.1	59.6	-	-	-	-	-	20	
24	85.5	81.2	71.6	68.0	60.2	57.9	-	-	-	-	-	24	
28	74.2	73.0	67.6	65.3	57.2	56.3	64.0	57.2	-	-	-	28	
32	60.8	60.8	61.3	60.9	54.9	54.1	56.0	51.6	57.5	-	-	32	
36	51.8	51.8	52.9	52.9	50.4	49.9	49.6	45.8	50.1	46.9	48.9	36	
40	43.9	43.9	44.7	44.7	-	-	43.0	40.5	43.2	41.9	44.5	42.4	40
48	-	-	-	-	-	-	33.4	33.3	33.8	33.5	34.6	34.4	48
56	-	-	-	-	-	-	26.8	26.8	27.2	27.2	27.5	27.5	56
64	-	-	-	-	-	-	22.0	21.9	22.3	22.2	22.8	22.8	64
72	-	-	-	-	-	-	17.9	17.9	18.6	18.6	19.0	19.0	72
80	-	-	-	-	-	-	15.0	15.0	15.5	15.5	15.7	15.7	80
88	-	-	-	-	-	-	12.5	12.5	12.9	12.9	13.2	13.2	88
96	-	-	-	-	-	-	10.5	10.5	10.8	10.8	11.0	11.0	96
104	-	-	-	-	-	-	8.8	8.8	9.0	9.0	9.2	9.2	104
112	-	-	-	-	-	-	7.2	7.2	7.4	7.4	-	-	112
120	-	-	-	-	-	-	5.9	5.9	6.1	6.1	-	-	120
128	-	-	-	-	-	-	4.8	4.8	-	-	-	-	128

		181.1 ft				196.9 ft							
ft	0,3°		1°		0,3°		1°		0,3°		1°		
	0°		18°		36°		0°		18°		36°		
1,000 lb													
48	30.4	26.8	-	-	-	-	-	-	-	-	-	48	
56	24.5	22.7	24.5	23.2	25.7	23.8	22.5	20.6	23.6	-	-	56	
64	19.7	18.6	20.4	19.5	20.8	20.2	17.8	16.8	18.9	17.7	19.8	18.6	64
72	15.5	15.3	16.4	16.0	16.8	16.6	14.2	13.5	15.1	14.4	16.0	15.1	72
80	12.6	12.4	13.2	13.2	13.7	13.7	11.3	10.9	12.1	11.7	12.8	12.4	80
88	10.0	10.0	10.6	10.6	11.1	11.1	8.7	8.5	9.3	9.3	10.0	9.9	88
96	7.7	7.7	8.4	8.4	8.8	8.8	6.5	6.5	7.2	7.2	7.7	7.7	96
104	5.7	5.7	6.4	6.4	6.7	6.7	4.8	4.8	5.3	5.3	5.7	5.7	104
112	4.1	4.1	4.8	4.8	5.0	5.0	-	-	3.7	3.7	4.1	4.1	112
120	-	-	3.2	3.2	3.5	3.5	-	-	-	-	-	-	120

Operation










HAV-HY






     																							
 																							
ft	0,3°		1°		0,3°		1°		0,3°		1°		0,3°		1°		ft						
	0°				18°				36°				0°					18°				36°	
1,000 lb																							
10	72.7	59.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10						
12	69.1	57.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12						
14	65.8	55.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14						
16	62.8	53.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16						
18	60.0	51.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18						
20	57.4	49.3	44.3	-	-	-	-	-	-	-	-	-	-	-	-	-	20						
24	52.7	45.9	41.2	37.6	-	-	-	-	-	-	-	-	-	-	-	-	24						
28	48.7	42.9	38.7	35.4	-	-	-	-	-	-	-	-	-	-	-	-	28						
32	45.2	40.2	36.6	33.6	28.2	26.3	46.1	39.7	-	-	-	-	-	-	-	-	32						
36	42.1	37.9	34.7	32.1	27.0	25.4	44.1	38.6	-	-	-	-	-	-	-	-	36						
40	39.1	35.7	32.8	30.7	25.8	24.6	42.0	37.1	35.3	-	-	-	-	-	-	-	40						
48	34.2	32.3	29.6	28.3	23.3	23.0	33.6	31.9	32.7	28.8	-	-	-	-	-	-	48						
56	28.8	28.4	26.5	26.2	21.7	21.7	26.7	26.7	28.3	26.5	24.8	23.0	-	-	-	-	56						
64	23.6	23.6	23.7	23.7	-	-	22.1	22.1	22.9	22.6	23.3	22.2	-	-	-	-	64						
72	-	-	-	-	-	-	18.4	18.4	19.0	19.0	19.5	19.5	-	-	-	-	72						
80	-	-	-	-	-	-	15.7	15.7	15.8	15.8	16.6	16.6	-	-	-	-	80						
88	-	-	-	-	-	-	13.2	13.2	13.7	13.7	14.0	14.0	-	-	-	-	88						
96	-	-	-	-	-	-	11.2	11.2	11.8	11.8	12.1	12.1	-	-	-	-	96						
104	-	-	-	-	-	-	9.5	9.5	10.1	10.1	10.6	10.6	-	-	-	-	104						
112	-	-	-	-	-	-	7.9	7.9	8.5	8.5	8.9	8.9	-	-	-	-	112						
120	-	-	-	-	-	-	6.5	6.5	7.0	7.0	7.4	7.4	-	-	-	-	120						
128	-	-	-	-	-	-	5.3	5.3	5.7	5.7	3.2	3.2	-	-	-	-	128						
136	-	-	-	-	-	-	4.4	4.4	4.7	4.7	-	-	-	-	-	-	136						
144	-	-	-	-	-	-	3.4	3.4	3.6	3.6	-	-	-	-	-	-	144						

 																							
ft	0,3°		1°		0,3°		1°		0,3°		1°		0,3°		1°		ft						
	0°				18°				36°				0°					18°				36°	
1,000 lb																							
56	23.3	20.4	-	-	-	-	20.5	16.8	-	-	-	-	-	-	-	-	56						
64	19.6	18.0	19.1	-	-	-	18.0	16.1	-	-	-	-	-	-	-	-	64						
72	16.0	15.1	17.2	16.8	-	-	14.2	13.3	16.2	-	-	-	-	-	-	-	72						
80	12.8	12.4	14.5	13.9	15.2	15.1	11.0	10.9	13.0	12.4	14.7	13.9	-	-	-	-	80						
88	10.2	10.1	11.8	11.6	12.9	12.7	8.5	8.5	10.2	10.1	11.8	11.4	-	-	-	-	88						
96	8.1	8.1	9.5	9.5	10.6	10.6	6.5	6.5	7.9	7.9	9.3	9.2	-	-	-	-	96						
104	6.4	6.4	7.5	7.5	8.6	8.6	4.8	4.8	6.2	6.2	7.3	7.3	-	-	-	-	104						
112	4.8	4.8	5.9	5.9	6.7	6.7	3.2	3.2	4.6	4.6	5.6	5.6	-	-	-	-	112						
120	3.5	3.5	4.5	4.5	5.1	5.1	-	-	3.2	3.2	4.1	4.1	-	-	-	-	120						
128	-	-	3.2	3.2	3.7	3.7	-	-	-	-	2.9	2.9	-	-	-	-	128						
136	-	-	-	-	2.5	2.5	-	-	-	-	-	-	-	-	-	-	136						

Operation

HAV-HY

77,200 lb +  33,100 lb		 55.8 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
14		44.5	37.4	-	-	-	-	-	-	-	-	14
16		43.0	36.4	-	-	-	-	-	-	-	-	16
18		41.6	35.3	-	-	-	-	-	-	-	-	18
20		40.1	34.2	-	-	-	-	-	-	-	-	20
24		37.4	32.1	-	-	-	-	-	-	-	-	24
28		34.9	30.3	-	-	-	-	-	-	-	-	28
32		32.6	28.5	25.5	-	-	-	-	-	-	-	32
36		30.6	27.0	24.1	21.8	-	-	30.0	24.8	-	-	36
40		28.6	25.6	22.8	20.8	-	-	29.2	24.1	-	-	40
48		25.5	23.3	20.7	19.0	16.3	15.8	27.6	22.9	-	-	48
56		23.0	21.2	18.9	17.5	14.6	14.6	25.0	21.8	20.6	18.4	56
64		20.7	19.3	17.3	16.3	13.4	13.4	21.7	20.5	19.4	17.6	64
72		18.6	17.9	15.7	15.2	12.6	12.6	18.4	18.1	18.5	16.8	72
80		16.7	16.7	14.4	14.4	-	-	15.5	15.5	16.5	15.8	80
88		-	-	-	-	-	-	13.4	13.4	14.1	14.0	88
96		-	-	-	-	-	-	11.4	11.4	12.1	12.1	96
104		-	-	-	-	-	-	9.9	9.9	10.7	10.7	104
112		-	-	-	-	-	-	8.5	8.5	9.2	9.2	112
120		-	-	-	-	-	-	7.2	7.2	8.1	8.1	120
128		-	-	-	-	-	-	5.9	5.9	6.8	6.8	128
136		-	-	-	-	-	-	4.9	4.9	5.6	5.6	136
144		-	-	-	-	-	-	4.0	4.0	4.7	4.7	144
152		-	-	-	-	-	-	3.2	3.2	3.6	3.6	152
160		-	-	-	-	-	-	-	-	2.8	2.8	160

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		36°		
ft		1,000 lb										ft
56		18.6	15.7	-	-	-	-	-	-	-	-	56
64		18.0	15.7	-	-	-	-	15.7	12.3	-	-	64
72		15.7	14.8	-	-	-	-	13.9	12.3	-	-	72
80		12.6	12.4	14.5	13.8	-	-	10.9	10.9	13.7	-	80
88		10.1	10.1	12.3	12.3	12.6	12.0	8.5	8.5	11.1	11.0	88
96		8.1	8.1	10.1	10.1	11.4	11.1	6.5	6.5	8.8	8.8	96
104		6.4	6.4	8.2	8.2	9.9	9.9	4.8	4.8	6.8	6.8	104
112		5.0	5.0	6.5	6.5	8.3	8.3	3.5	3.5	5.2	5.2	112
120		3.7	3.7	5.2	5.2	6.7	6.7	-	-	3.9	3.9	120
128		2.6	2.6	4.0	4.0	5.3	5.3	-	-	2.9	2.9	128
136		-	-	2.9	2.9	4.0	4.0	-	-	-	-	136
144		-	-	-	-	2.9	2.9	-	-	-	-	144

Operation










HAV-HY






77,200 lb + 33,100 lb		75.5 ft		11.5 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
													0°
1,000 lb													
18	27.7	-	-	-	-	-	-	-	-	-	-	-	18
20	27.0	23.3	-	-	-	-	-	-	-	-	-	-	20
24	25.9	22.2	-	-	-	-	-	-	-	-	-	-	24
28	24.5	21.1	-	-	-	-	-	-	-	-	-	-	28
32	23.4	20.2	-	-	-	-	-	-	-	-	-	-	32
36	22.2	19.3	-	-	-	-	-	-	-	-	-	-	36
40	21.0	18.4	17.9	-	-	-	19.5	17.1	-	-	-	-	40
48	18.9	16.8	16.2	14.6	-	-	18.5	16.3	-	-	-	-	48
56	17.2	15.3	14.8	13.4	-	-	17.7	15.5	-	-	-	-	56
64	15.5	14.1	13.7	12.3	10.4	10.3	16.9	14.9	14.3	-	-	-	64
72	14.4	13.0	12.6	11.5	9.5	9.5	16.1	14.1	13.5	12.1	-	-	72
80	13.1	12.2	11.3	10.9	8.7	8.7	14.9	13.4	12.9	11.6	10.1	9.4	80
88	12.2	11.4	10.4	10.2	8.2	8.2	13.2	12.5	12.2	11.1	9.7	9.2	88
96	11.1	10.6	9.5	9.5	7.8	7.8	11.2	11.2	11.6	10.7	9.2	8.9	96
104	10.1	10.0	8.9	8.9	-	-	9.9	9.9	10.7	10.2	8.9	8.6	104
112	-	-	-	-	-	-	8.5	8.5	9.2	9.2	8.6	8.4	112
120	-	-	-	-	-	-	7.4	7.4	8.0	8.0	8.2	8.1	120
128	-	-	-	-	-	-	6.2	6.2	6.9	6.9	7.6	7.5	128
136	-	-	-	-	-	-	5.1	5.1	6.1	6.1	6.6	6.6	136
144	-	-	-	-	-	-	4.0	4.0	5.1	5.1	5.8	5.8	144
152	-	-	-	-	-	-	3.2	3.2	4.1	4.1	4.7	4.7	152
160	-	-	-	-	-	-	2.6	2.6	3.3	3.3	3.7	3.7	160

		181.1 ft				196.9 ft							
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
													0°
1,000 lb													
64	12.8	11.0	-	-	-	-	-	-	-	-	-	-	64
72	12.4	11.0	-	-	-	-	11.2	8.8	-	-	-	-	72
80	11.6	10.7	-	-	-	-	10.0	8.7	-	-	-	-	80
88	9.4	9.4	10.5	9.6	-	-	7.7	7.7	-	-	-	-	88
96	7.4	7.4	9.8	9.3	-	-	5.9	5.9	8.7	8.4	-	-	96
104	5.7	5.7	8.4	8.3	8.6	-	4.2	4.2	6.8	6.8	-	-	104
112	4.3	4.3	6.7	6.7	8.3	7.7	-	-	5.4	5.4	7.6	7.2	112
120	3.3	3.3	5.3	5.3	7.2	7.2	-	-	3.9	3.9	6.1	6.1	120
128	-	-	4.1	4.1	5.8	5.8	-	-	2.9	2.9	4.7	4.7	128
136	-	-	3.0	3.0	4.7	4.7	-	-	-	-	3.5	3.5	136
144	-	-	-	-	3.6	3.6	-	-	-	-	2.5	2.5	144

Operation










HAV-HY






55,100 lb +  33,100 lb		 16.4 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
10	119.2	105.7	89.2	-	-	-	-	-	-	-	-	10	
12	113.1	101.2	85.9	80.0	-	-	-	-	-	-	-	12	
14	107.3	97.2	82.9	77.5	-	-	-	-	-	-	-	14	
16	102.0	93.4	80.1	75.4	65.7	61.8	-	-	-	-	-	16	
18	97.4	90.0	77.8	73.4	64.4	60.7	-	-	-	-	-	18	
20	92.7	86.8	75.5	71.4	63.1	59.6	-	-	-	-	-	20	
24	78.0	77.7	71.6	68.0	60.2	57.9	-	-	-	-	-	24	
28	61.6	61.6	63.3	61.9	57.2	56.3	54.0	49.5	-	-	-	28	
32	50.1	50.1	51.5	51.5	51.9	51.7	47.6	44.0	48.4	43.6	-	32	
36	42.4	42.4	43.5	43.5	44.4	44.4	41.6	39.2	42.1	39.6	43.7	38.5	36
40	35.6	35.6	36.5	36.5	-	-	36.5	35.1	37.1	35.8	37.6	36.2	40
48	-	-	-	-	-	-	28.0	28.0	29.0	29.0	29.4	29.4	48
56	-	-	-	-	-	-	21.8	21.8	22.6	22.6	23.2	23.2	56
64	-	-	-	-	-	-	17.3	17.3	17.8	17.8	18.5	18.5	64
72	-	-	-	-	-	-	13.7	13.7	14.4	14.4	14.8	14.8	72
80	-	-	-	-	-	-	11.3	11.3	11.7	11.7	12.0	12.0	80
88	-	-	-	-	-	-	9.1	9.1	9.5	9.5	9.7	9.7	88
96	-	-	-	-	-	-	7.2	7.2	7.6	7.6	7.8	7.8	96
104	-	-	-	-	-	-	5.5	5.5	5.9	5.9	6.0	6.0	104
112	-	-	-	-	-	-	4.1	4.1	4.6	4.6	-	-	112
120	-	-	-	-	-	-	3.1	3.1	3.3	3.3	-	-	120

		 181.1 ft				 196.9 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
48	23.2	21.2	-	-	-	-	-	-	-	-	-	48	
56	18.1	16.9	19.2	17.9	20.1	18.8	16.0	15.1	17.2	-	-	56	
64	14.0	13.4	15.1	14.3	15.8	15.0	12.2	11.7	13.3	12.6	14.0	13.5	64
72	10.9	10.4	11.8	11.3	12.4	12.0	9.1	8.9	10.0	9.8	10.7	10.4	72
80	8.2	8.0	8.9	8.9	9.5	9.4	6.5	6.5	7.4	7.4	8.0	8.0	80
88	6.0	6.0	6.6	6.6	7.2	7.2	4.4	4.4	5.2	5.2	5.8	5.8	88
96	4.2	4.2	4.8	4.8	5.2	5.2	-	-	3.4	3.4	3.9	3.9	96
104	2.6	2.6	3.1	3.1	3.5	3.5	-	-	-	-	-	-	104

Operation

HAV-HY

55,100 lb +  33,100 lb		 36.1 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
10		72.7	59.8	-	-	-	-	-	-	-	-	10
12		69.1	57.4	-	-	-	-	-	-	-	-	12
14		65.8	55.3	-	-	-	-	-	-	-	-	14
16		62.8	53.1	-	-	-	-	-	-	-	-	16
18		60.0	51.2	-	-	-	-	-	-	-	-	18
20		57.4	49.3	44.3	-	-	-	-	-	-	-	20
24		52.7	45.9	41.2	37.6	-	-	-	-	-	-	24
28		48.7	42.9	38.7	35.4	-	-	-	-	-	-	28
32		45.2	40.2	36.6	33.6	28.2	26.3	44.6	39.0	-	-	32
36		42.0	37.9	34.7	32.1	27.0	25.4	39.9	35.5	-	-	36
40		38.5	35.5	32.8	30.7	25.8	24.6	35.9	33.4	35.0	-	40
48		29.5	29.5	29.2	28.2	23.3	23.0	28.4	27.6	29.4	27.5	48
56		23.2	23.2	24.2	24.2	21.7	21.7	22.6	22.4	23.3	23.1	56
64		18.8	18.8	19.4	19.4	-	-	18.0	18.0	19.1	19.1	64
72		-	-	-	-	-	-	14.6	14.6	15.7	15.7	72
80		-	-	-	-	-	-	12.0	12.0	12.8	12.8	80
88		-	-	-	-	-	-	9.7	9.7	10.6	10.6	88
96		-	-	-	-	-	-	8.0	8.0	8.7	8.7	96
104		-	-	-	-	-	-	6.4	6.4	7.0	7.0	104
112		-	-	-	-	-	-	5.0	5.0	5.7	5.7	112
120		-	-	-	-	-	-	3.7	3.7	4.3	4.3	120
128		-	-	-	-	-	-	2.8	2.8	3.2	3.2	128

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
56		18.2	16.6	-	-	-	-	16.2	14.8	-	-	56
64		14.0	13.2	16.2	-	-	-	12.2	11.6	-	-	64
72		10.7	10.4	12.6	12.2	-	-	8.9	8.9	11.1	-	72
80		8.0	8.0	9.8	9.8	11.5	11.1	6.5	6.5	8.3	8.3	80
88		6.0	6.0	7.4	7.4	8.9	8.8	4.4	4.4	6.1	6.1	88
96		4.2	4.2	5.6	5.6	6.7	6.7	2.7	2.7	4.2	4.2	96
104		2.8	2.8	3.9	3.9	5.0	5.0	-	-	2.6	2.6	104
112		-	-	-	-	3.7	3.7	-	-	-	-	112

Operation










HAV-HY






55,100 lb +		33,100 lb		55.8 ft		11.5 ft		32.2 ft/s		360°		ASME B30.5		
		42.3 ft				126.0 ft								
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°
1,000 lb														
14	44.5	37.4	-	-	-	-	-	-	-	-	-	-	-	14
16	43.0	36.4	-	-	-	-	-	-	-	-	-	-	-	16
18	41.6	35.3	-	-	-	-	-	-	-	-	-	-	-	18
20	40.1	34.2	-	-	-	-	-	-	-	-	-	-	-	20
24	37.4	32.1	-	-	-	-	-	-	-	-	-	-	-	24
28	34.9	30.3	-	-	-	-	-	-	-	-	-	-	-	28
32	32.6	28.5	25.5	-	-	-	-	-	-	-	-	-	-	32
36	30.6	27.0	24.1	21.8	-	-	30.0	24.8	-	-	-	-	-	36
40	28.6	25.6	22.8	20.8	-	-	29.1	24.1	-	-	-	-	-	40
48	25.5	23.3	20.7	19.0	16.3	15.8	25.8	22.6	-	-	-	-	-	48
56	23.0	21.2	18.9	17.5	14.6	14.6	22.0	20.6	20.6	18.4	-	-	-	56
64	20.1	19.3	17.3	16.3	13.4	13.4	18.5	18.3	18.8	17.4	-	-	-	64
72	16.8	16.8	15.7	15.2	12.6	12.6	15.3	15.3	16.2	16.1	15.0	13.9	-	72
80	14.2	14.2	14.3	14.3	-	-	12.6	12.6	13.8	13.8	14.1	13.4	-	80
88	-	-	-	-	-	-	10.4	10.4	11.8	11.8	12.3	12.3	-	88
96	-	-	-	-	-	-	8.6	8.6	9.8	9.8	10.7	10.7	-	96
104	-	-	-	-	-	-	7.0	7.0	8.1	8.1	9.0	9.0	-	104
112	-	-	-	-	-	-	5.7	5.7	6.8	6.8	7.4	7.4	-	112
120	-	-	-	-	-	-	4.4	4.4	5.4	5.4	6.1	6.1	-	120
128	-	-	-	-	-	-	3.4	3.4	4.2	4.2	4.8	4.8	-	128
136	-	-	-	-	-	-	2.4	2.4	3.3	3.3	3.8	3.8	-	136
144	-	-	-	-	-	-	-	-	2.3	2.3	2.7	2.7	-	144

		181.1 ft				196.9 ft								
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°
1,000 lb														
56	17.0	15.1	-	-	-	-	-	-	-	-	-	-	-	56
64	13.8	13.2	-	-	-	-	12.0	11.2	-	-	-	-	-	64
72	10.4	10.4	-	-	-	-	8.7	8.7	-	-	-	-	-	72
80	8.0	8.0	10.6	10.5	-	-	6.3	6.3	9.1	-	-	-	-	80
88	6.0	6.0	8.3	8.3	10.4	10.3	4.3	4.3	6.9	6.9	-	-	-	88
96	4.2	4.2	6.3	6.3	8.3	8.3	2.7	2.7	5.0	5.0	7.2	7.2	-	96
104	2.8	2.8	4.8	4.8	6.4	6.4	-	-	3.5	3.5	5.3	5.3	-	104
112	-	-	3.5	3.5	5.0	5.0	-	-	-	-	3.7	3.7	-	112
120	-	-	-	-	3.7	3.7	-	-	-	-	-	-	-	120

Operation










HAV-HY






55,100 lb +  33,100 lb		 75.5 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
18		27.7	-	-	-	-	-	-	-	-	-	18
20		27.0	23.3	-	-	-	-	-	-	-	-	20
24		25.9	22.2	-	-	-	-	-	-	-	-	24
28		24.5	21.1	-	-	-	-	-	-	-	-	28
32		23.4	20.2	-	-	-	-	-	-	-	-	32
36		22.2	19.3	-	-	-	-	-	-	-	-	36
40		21.0	18.4	17.9	-	-	-	19.5	17.1	-	-	40
48		18.9	16.8	16.2	14.6	-	-	18.5	16.3	-	-	48
56		17.2	15.3	14.8	13.4	-	-	17.7	15.5	-	-	56
64		15.5	14.1	13.7	12.3	10.4	10.3	16.4	14.7	14.3	-	64
72		14.4	13.0	12.6	11.5	9.5	9.5	14.8	13.7	13.5	12.1	72
80		13.1	12.2	11.3	10.9	8.7	8.7	12.6	12.4	12.7	11.6	80
88		12.2	11.4	10.4	10.2	8.2	8.2	10.4	10.4	11.6	10.8	88
96		10.9	10.6	9.5	9.5	7.8	7.8	8.5	8.5	10.2	10.1	96
104		9.4	9.4	8.9	8.9	-	-	7.0	7.0	8.8	8.8	104
112		-	-	-	-	-	-	5.7	5.7	7.2	7.2	112
120		-	-	-	-	-	-	4.6	4.6	5.9	5.9	120
128		-	-	-	-	-	-	3.5	3.5	4.8	4.8	128
136		-	-	-	-	-	-	2.6	2.6	3.8	3.8	136
144		-	-	-	-	-	-	-	-	2.7	2.7	144

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
64		12.1	11.0	-	-	-	-	-	-	-	-	64
72		9.5	9.5	-	-	-	-	7.8	7.7	-	-	72
80		7.2	7.2	-	-	-	-	5.4	5.4	-	-	80
88		5.2	5.2	8.3	8.3	-	-	3.6	3.6	-	-	88
96		3.6	3.6	6.3	6.3	-	-	-	-	-	-	96
104		-	-	4.8	4.8	7.3	-	-	-	-	-	104
112		-	-	3.5	3.5	5.6	5.6	-	-	-	-	112
120		-	-	-	-	4.2	4.2	-	-	-	-	120
128		-	-	-	-	3.1	3.1	-	-	-	-	128

Operation

HAV-HY

33,100 lb +  33,100 lb		 16.4 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
10		119.2	105.7	89.2	-	-	-	-	-	-	-	10
12		113.1	101.2	85.9	80.0	-	-	-	-	-	-	12
14		107.3	97.2	82.9	77.5	-	-	-	-	-	-	14
16		102.0	93.4	80.1	75.4	65.7	61.8	-	-	-	-	16
18		93.5	88.4	77.8	73.4	64.4	60.7	-	-	-	-	18
20		83.7	82.3	75.2	71.4	63.1	59.6	-	-	-	-	20
24		62.8	62.8	65.1	64.8	60.0	57.9	-	-	-	-	24
28		49.1	49.1	50.9	50.9	52.5	52.2	45.3	40.4	-	-	28
32		39.6	39.6	41.0	41.0	42.2	42.2	38.9	35.0	40.5	33.7	32
36		33.2	33.2	34.3	34.3	35.2	35.2	33.8	30.7	35.3	32.2	36
40		27.6	27.6	28.4	28.4	-	-	29.1	26.9	30.2	28.2	40
48		-	-	-	-	-	-	21.6	21.0	22.5	22.0	48
56		-	-	-	-	-	-	16.4	16.4	17.2	17.2	56
64		-	-	-	-	-	-	12.6	12.6	13.3	13.3	64
72		-	-	-	-	-	-	9.8	9.8	10.2	10.2	72
80		-	-	-	-	-	-	7.4	7.4	7.8	7.8	80
88		-	-	-	-	-	-	5.4	5.4	5.8	5.8	88
96		-	-	-	-	-	-	3.8	3.8	4.2	4.2	96
104		-	-	-	-	-	-	2.4	2.4	2.8	2.8	104

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
48		16.0	14.8	-	-	-	-	-	-	-	-	48
56		11.8	11.2	12.9	12.1	13.9	13.0	9.8	9.4	10.9	-	56
64		8.4	8.3	9.5	9.1	10.2	9.9	6.6	6.5	7.7	7.6	64
72		5.8	5.8	6.7	6.7	7.3	7.3	4.0	4.0	4.9	4.9	72
80		3.7	3.7	4.3	4.3	5.0	5.0	-	-	-	-	80

Operation










HAV-HY






33,100 lb + 33,100 lb		36.1 ft		11.5 ft		32.2 ft/s		360°		ASME B30.5	
		42.3 ft				126.0 ft					
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft
	0°		18°		36°		0°		18°		
1,000 lb											
10	72.7	59.8	-	-	-	-	-	-	-	-	10
12	69.1	57.4	-	-	-	-	-	-	-	-	12
14	65.8	55.3	-	-	-	-	-	-	-	-	14
16	62.8	53.1	-	-	-	-	-	-	-	-	16
18	60.0	51.2	-	-	-	-	-	-	-	-	18
20	57.4	49.3	44.3	-	-	-	-	-	-	-	20
24	52.7	45.9	41.2	37.6	-	-	-	-	-	-	24
28	48.7	42.9	38.7	35.4	-	-	-	-	-	-	28
32	42.6	40.2	36.6	33.6	28.2	26.3	37.2	30.9	-	-	32
36	36.2	35.5	34.7	32.1	27.0	25.4	33.3	29.7	-	-	36
40	30.5	30.5	32.4	30.4	25.8	24.6	29.0	26.2	28.1	-	40
48	22.9	22.9	24.4	24.4	23.3	23.0	22.5	20.6	23.8	22.9	48
56	17.7	17.7	18.8	18.8	19.7	19.7	17.2	16.5	18.8	18.4	56
64	14.1	14.1	14.6	14.6	-	-	13.3	13.2	14.6	14.6	64
72	-	-	-	-	-	-	10.4	10.4	11.5	11.5	72
80	-	-	-	-	-	-	8.3	8.3	9.2	9.2	80
88	-	-	-	-	-	-	6.2	6.2	7.3	7.3	88
96	-	-	-	-	-	-	4.6	4.6	5.4	5.4	96
104	-	-	-	-	-	-	3.3	3.3	3.9	3.9	104
112	-	-	-	-	-	-	-	-	-	-	112

		181.1 ft				196.9 ft					
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft
	0°		18°		36°		0°		18°		
1,000 lb											
56	11.8	10.9	-	-	-	-	9.9	9.3	-	-	56
64	8.4	8.2	10.6	-	-	-	6.6	6.5	-	-	64
72	5.6	5.6	7.6	7.5	-	-	4.0	4.0	6.0	-	72
80	3.5	3.5	5.2	5.2	6.9	6.8	-	-	3.9	-	80
88	-	-	3.4	3.4	4.9	4.9	-	-	-	-	88
96	-	-	-	-	3.1	3.1	-	-	-	-	96

Operation

HAV-HY

33,100 lb +  33,100 lb		 55.8 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5		
		 42.3 ft				 126.0 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
14		44.5	37.4	-	-	-	-	-	-	-	-	14
16		43.0	36.4	-	-	-	-	-	-	-	-	16
18		41.6	35.3	-	-	-	-	-	-	-	-	18
20		40.1	34.2	-	-	-	-	-	-	-	-	20
24		37.4	32.1	-	-	-	-	-	-	-	-	24
28		34.9	30.3	-	-	-	-	-	-	-	-	28
32		32.6	28.5	25.5	-	-	-	-	-	-	-	32
36		30.6	27.0	24.1	21.8	-	-	27.9	23.8	-	-	36
40		28.6	25.6	22.8	20.8	-	-	26.3	23.2	-	-	40
48		24.5	23.0	20.7	19.0	16.3	15.8	22.7	20.3	-	-	48
56		19.3	19.3	18.9	17.5	14.6	14.6	17.8	16.3	19.0	17.6	56
64		15.5	15.5	16.6	16.3	13.4	13.4	13.9	13.3	16.0	15.5	64
72		12.6	12.6	13.5	13.5	12.6	12.6	10.9	10.9	12.9	12.8	72
80		10.5	10.5	11.1	11.1	-	-	8.5	8.5	10.5	10.5	80
88		-	-	-	-	-	-	6.7	6.7	8.4	8.4	88
96		-	-	-	-	-	-	5.3	5.3	6.7	6.7	96
104		-	-	-	-	-	-	3.9	3.9	5.2	5.2	104
112		-	-	-	-	-	-	-	-	3.9	3.9	112
120		-	-	-	-	-	-	-	-	-	-	120

		 181.1 ft				 196.9 ft						
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
		0°		18°		36°		0°		18°		
ft		1,000 lb										ft
56		11.5	10.8	-	-	-	-	-	-	-	-	56
64		8.1	8.0	-	-	-	-	-	-	-	-	64
72		5.6	5.6	-	-	-	-	-	-	-	-	72
80		3.5	3.5	6.1	5.4	-	-	-	-	-	-	80
88		-	-	4.2	3.6	6.4	6.4	-	-	-	-	88
96		-	-	-	-	4.5	4.5	-	-	-	-	96
104		-	-	-	-	3.0	3.0	-	-	-	-	104

Operation










HAV-HY

33,100 lb + 33,100 lb		75.5 ft		11.5 ft		32.2 ft/s		360°		ASME B30.5	
		42.3 ft				126.0 ft					
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft
	0°		18°		36°		0°		18°		
1,000 lb											
18	27.7	-	-	-	-	-	-	-	-	-	18
20	27.0	23.3	-	-	-	-	-	-	-	-	20
24	25.9	22.2	-	-	-	-	-	-	-	-	24
28	24.5	21.1	-	-	-	-	-	-	-	-	28
32	23.4	20.2	-	-	-	-	-	-	-	-	32
36	22.2	19.3	-	-	-	-	-	-	-	-	36
40	21.0	18.4	17.9	-	-	-	19.5	17.1	-	-	40
48	18.9	16.8	16.2	14.6	-	-	18.0	16.0	-	-	48
56	17.2	15.3	14.8	13.4	-	-	15.8	14.6	-	-	56
64	15.5	14.1	13.7	12.3	10.4	10.3	13.1	12.8	13.8	-	64
72	13.3	13.0	12.6	11.5	9.5	9.5	10.2	10.2	12.8	11.9	72
80	11.2	11.2	11.3	10.9	8.7	8.7	8.1	8.1	10.7	10.7	80
88	9.4	9.4	10.2	9.9	8.2	8.2	6.3	6.3	8.6	8.6	88
96	7.9	7.9	8.6	8.6	7.8	7.8	4.8	4.8	6.9	6.9	96
104	6.7	6.7	7.0	7.0	-	-	3.5	3.5	5.5	5.5	104
112	-	-	-	-	-	-	-	-	4.1	4.1	112
120	-	-	-	-	-	-	-	-	3.1	3.1	120
128	-	-	-	-	-	-	-	-	-	-	128

		181.1 ft				196.9 ft					
ft	0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		0,3° 1°		ft
	0°		18°		36°		0°		18°		
1,000 lb											
64	7.0	7.0	-	-	-	-	-	-	-	-	64
72	4.7	4.7	-	-	-	-	-	-	-	-	72

Operation

HAV-HY

11,000 lb +  33,100 lb		 16.4 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5				
 42.3 ft						 126.0 ft								
 		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°			
ft		0°		18°		36°		0°		18°		36°		ft
1,000 lb														
10	119.2	105.7	89.2	-	-	-	-	-	-	-	-	-	10	
12	113.1	101.2	85.9	80.0	-	-	-	-	-	-	-	-	12	
14	104.3	93.8	82.9	77.5	-	-	-	-	-	-	-	-	14	
16	90.5	81.6	80.1	75.4	65.7	61.8	-	-	-	-	-	-	16	
18	76.9	71.6	74.4	71.2	64.4	60.7	-	-	-	-	-	-	18	
20	64.3	62.5	67.5	65.9	62.5	59.3	-	-	-	-	-	-	20	
24	47.5	47.5	49.8	49.8	51.9	51.9	-	-	-	-	-	-	24	
28	36.7	36.7	38.4	38.4	40.0	40.0	33.5	29.4	-	-	-	-	28	
32	29.1	29.1	30.5	30.5	31.7	31.7	28.1	25.1	29.9	24.0	-	-	32	
36	24.0	24.0	25.1	25.1	26.0	26.0	24.0	21.7	25.7	23.1	27.0	21.9	36	
40	19.6	19.6	20.4	20.4	-	-	20.3	18.6	21.8	19.9	22.9	21.0	40	
48	-	-	-	-	-	-	14.9	13.9	15.9	15.0	16.8	15.9	48	
56	-	-	-	-	-	-	10.8	10.4	11.7	11.2	12.2	11.9	56	
64	-	-	-	-	-	-	7.7	7.6	8.5	8.3	9.0	8.9	64	
72	-	-	-	-	-	-	5.1	5.1	5.8	5.8	6.2	6.2	72	
80	-	-	-	-	-	-	-	-	3.7	3.7	4.1	4.1	80	

 181.1 ft						 196.9 ft								
 		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°			
ft		0°		18°		36°		0°		18°		36°		ft
1,000 lb														
48	8.7	8.3	-	-	-	-	-	-	-	-	-	-	48	
56	5.3	5.3	-	-	-	-	-	-	-	-	-	-	56	
64	2.7	2.7	-	-	-	-	-	-	-	-	-	-	64	

Operation










HAV-HY










11,000 lb + 33,100 lb		36.1 ft		11.5 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
													0°
1,000 lb													
10	72.7	59.8	-	-	-	-	-	-	-	-	-	10	
12	69.1	57.4	-	-	-	-	-	-	-	-	-	12	
14	65.8	55.3	-	-	-	-	-	-	-	-	-	14	
16	62.8	53.1	-	-	-	-	-	-	-	-	-	16	
18	60.0	51.2	-	-	-	-	-	-	-	-	-	18	
20	57.4	49.3	44.3	-	-	-	-	-	-	-	-	20	
24	50.7	45.8	41.2	37.6	-	-	-	-	-	-	-	24	
28	39.9	39.9	38.7	35.4	-	-	-	-	-	-	-	28	
32	32.2	32.2	34.8	33.6	28.2	26.3	26.9	21.6	-	-	-	32	
36	27.0	27.0	29.4	29.2	27.0	25.4	23.8	21.0	-	-	-	36	
40	22.4	22.4	24.4	24.4	25.5	24.3	20.3	18.2	22.5	-	-	40	
48	16.5	16.5	17.9	17.9	19.3	19.3	15.2	13.8	17.6	15.9	-	48	
56	12.4	12.4	13.3	13.3	14.2	14.2	11.3	10.4	13.2	12.3	14.8	14.0	56
64	9.4	9.4	10.1	10.1	-	-	8.1	7.8	9.9	9.4	11.2	10.9	64
72	-	-	-	-	-	-	5.6	5.6	7.1	7.1	8.4	8.2	72
80	-	-	-	-	-	-	3.9	3.9	5.2	5.2	6.3	6.1	80
88	-	-	-	-	-	-	-	-	3.4	3.4	4.3	4.3	88
96	-	-	-	-	-	-	-	-	-	-	2.7	2.7	96

11,000 lb + 33,100 lb		55.8 ft		11.5 ft		32.2 ft/s		360°		ASME B30.5			
		42.3 ft				126.0 ft							
ft	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	
													0°
1,000 lb													
14	44.5	37.4	-	-	-	-	-	-	-	-	-	14	
16	43.0	36.4	-	-	-	-	-	-	-	-	-	16	
18	41.6	35.3	-	-	-	-	-	-	-	-	-	18	
20	40.1	34.2	-	-	-	-	-	-	-	-	-	20	
24	37.4	32.1	-	-	-	-	-	-	-	-	-	24	
28	34.9	30.3	-	-	-	-	-	-	-	-	-	28	
32	32.6	28.5	25.5	-	-	-	-	-	-	-	-	32	
36	28.5	26.5	24.1	21.8	-	-	22.9	18.1	-	-	-	36	
40	24.2	24.2	22.8	20.8	-	-	20.3	17.7	-	-	-	40	
48	18.0	18.0	19.9	18.7	16.3	15.8	15.1	13.6	-	-	-	48	
56	13.9	13.9	15.5	15.5	14.6	14.6	11.0	10.5	14.1	12.8	-	56	
64	10.7	10.7	12.1	12.1	13.1	13.1	8.0	8.0	10.7	10.2	-	64	
72	8.4	8.4	9.5	9.5	10.4	10.4	5.8	5.8	8.0	8.0	10.2	10.0	72
80	6.8	6.8	7.4	7.4	-	-	4.0	4.0	5.9	5.9	7.9	7.6	80
88	-	-	-	-	-	-	-	-	4.3	4.3	6.0	5.8	88
96	-	-	-	-	-	-	-	-	3.0	3.0	4.4	4.4	96
104	-	-	-	-	-	-	-	-	-	-	3.0	3.0	104

Operation

HAV-HY

0 lb +  33,100 lb		 16.4 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
10	119.2	105.6	89.2	-	-	-	-	-	-	-	-	10	
12	109.5	96.7	85.9	80.0	-	-	-	-	-	-	-	12	
14	91.3	81.2	82.9	77.5	-	-	-	-	-	-	-	14	
16	77.1	69.4	79.8	72.9	65.7	61.8	-	-	-	-	-	16	
18	65.4	60.6	69.4	64.7	63.8	60.7	-	-	-	-	-	18	
20	54.5	52.5	57.8	56.2	60.6	58.6	-	-	-	-	-	20	
24	40.0	40.0	42.4	42.4	44.5	44.5	-	-	-	-	-	24	
28	30.5	30.5	32.4	32.4	33.9	33.9	27.3	23.9	-	-	-	28	
32	23.9	23.9	25.5	25.5	26.5	26.5	22.7	20.1	24.3	19.0	-	32	
36	19.5	19.5	20.7	20.7	21.5	21.5	19.1	17.1	20.6	18.6	22.0	17.4	36
40	15.7	15.7	16.5	16.5	-	-	15.9	14.4	17.2	15.7	18.5	16.8	40
48	-	-	-	-	-	-	11.2	10.3	12.2	11.4	13.2	12.3	48
56	-	-	-	-	-	-	7.6	7.2	8.5	8.1	9.4	8.8	56
64	-	-	-	-	-	-	4.9	4.8	5.8	5.6	6.3	6.1	64
72	-	-	-	-	-	-	2.9	2.9	3.6	3.4	4.0	4.0	72

0 lb +  33,100 lb		 36.1 ft		 11.5 ft		 32.2 ft/s		360°		ASME B30.5			
		 42.3 ft				 126.0 ft							
		0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°	0,3°	1°		
		0°		18°		36°		0°		36°			
ft		1,000 lb										ft	
10	72.7	59.8	-	-	-	-	-	-	-	-	-	10	
12	69.1	57.4	-	-	-	-	-	-	-	-	-	12	
14	65.8	55.3	-	-	-	-	-	-	-	-	-	14	
16	62.8	53.1	-	-	-	-	-	-	-	-	-	16	
18	59.9	51.2	-	-	-	-	-	-	-	-	-	18	
20	56.5	49.0	44.3	-	-	-	-	-	-	-	-	20	
24	43.4	41.4	41.2	37.6	-	-	-	-	-	-	-	24	
28	33.8	33.7	36.7	35.2	-	-	-	-	-	-	-	28	
32	27.0	27.0	30.0	30.0	28.2	26.3	21.5	17.0	-	-	-	32	
36	22.5	22.5	24.9	24.9	25.5	24.5	19.0	16.8	-	-	-	36	
40	18.5	18.5	20.5	20.5	22.4	22.4	15.9	14.2	18.1	-	-	40	
48	13.3	13.3	14.7	14.7	16.1	16.1	11.4	10.4	13.7	12.5	-	48	
56	9.7	9.7	10.6	10.6	11.5	11.5	7.8	7.4	9.9	9.3	11.8	10.9	56
64	7.1	7.1	7.6	7.6	-	-	5.1	5.1	6.9	6.7	8.5	8.0	64
72	-	-	-	-	-	-	3.1	3.1	4.7	4.7	6.0	5.8	72
80	-	-	-	-	-	-	-	-	-	-	4.1	3.9	80

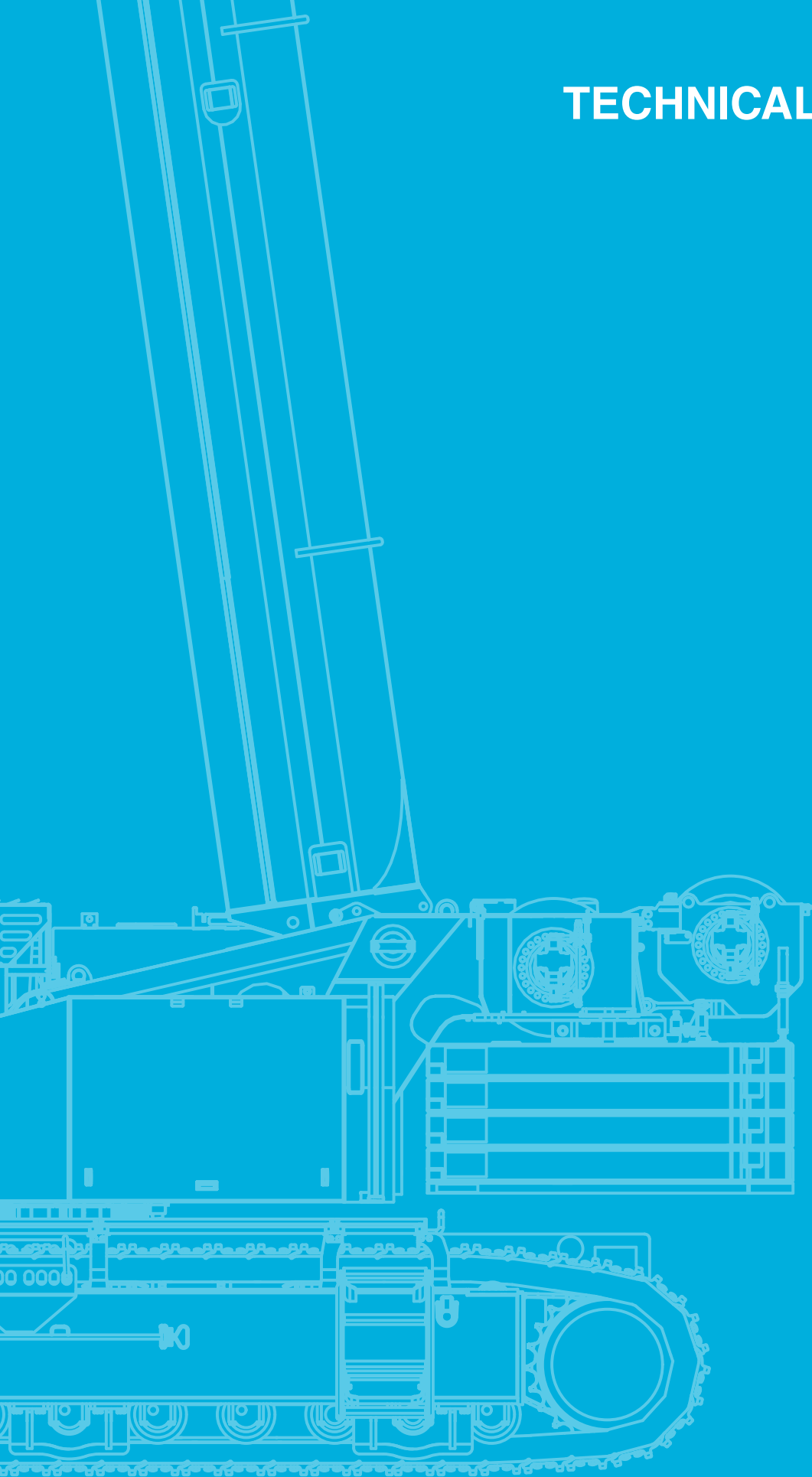
Notes to Lifting Capacity

Ratings are in compliance with ASME B 30.5.

Weight of hook blocks and slings is part of the load, and is to be deducted from the capacity ratings.
Consult operation manual for further details.

Note: Data published herein is intended as a guide only and shall not be construed to warrant applicability for lifting purposes.
Crane operation is subject to the computer charts and operation manual both supplied with the crane.

TECHNICAL DESCRIPTION



Technical Description

Basic machine

Carrier

Carrier comprising a carbody, 4 extension beams and 2 crawlers; easy pin connection between crawler and extension beams.

Carbody	Bending and torsion resistant welding construction, made of high strength fine grain steel. Bottom car body design suitable for any trailer type. Hydraulic and electric lines are protected and guided inside sliding energy chains with quick connections to crawler drives.
Track extension	Track base infinitely adjustable (incl. non-symmetrical) The IC-1 Plus control system is automatically determining the permissible lifting capacity based on the track extension, slewing position and ground roll/list angle Track adjustment possible on the spot or during traveling (control from cabin or with remote control) Integrated protected extension cylinders Removable track extension beams (incl. hydraulic cylinders), quick couplings and electric connectors for easy coupling/disconnecting of hydraulic hoses and elec cables. Clear indication of component weight
Track frame	B9HD components (10.2 in. pitch), excavator type, oil lubricated sealed rollers and idler wheel 13 bottom rollers and 4 chain guides on each side 2-bar 39.4 in. crawler shoes Large integrated platform above the track shoes with sliding platforms between crawlers and car body; two integrated inclinable ladders at each crawler frame
Track frame drive	The tracks are powered by one hydraulic motor each through closed planetary gear drive running in oil bath, equipped with spring-applied hydraulically released holding brakes; each crawler speed is infinitely variable, both independently and in opposite direction. Drives are equipped with counterbalance valve and speed sensor. Traction force: 326,000 lbf in total Travelling speed: up to 1.43 mph
Track frame assembly	Self-assembly with 4 x container lift points accessible from ground and platform Pinning of track frames to extension beams is manual; pinning is done from the outside Hydraulic and electric quick coupling for quick and reliable assembly/disassembly
Assembly jacks	Outrigger legs with 2 positions (transport, in longitudinal direction and rigging, in outward direction) Outrigger cylinders can tumble (with assistance spring allowing low ergonomic human force) to maximize ground clearance during travelling. Jacks with integrated check valves and pressure sensor, allowing auto levelling
Outriggers	4 rectangular outrigger steel pads $A = 0.56 \text{ ft}^2$ Outrigger pads can remain on cylinders, even in tumbled position (no need to detach and handle pads, no impact on ground clearance) 2 x 2 handles to allow comfortable handling; storage place at the side of the outrigger leg
Central ballast	2 x steel box type central ballast with 16,540 lb each Anti-slip top surface; integrated lift points; accessible manual pinning to secure central ballast No loose parts Geometry with slope angle to mitigate ground interference whilst traveling on rough terrain On front central ballast: large rack plate for tool box or other customized storage items On rear central ballast: large robust open top box, integrated in central ballast, for storage of e.g. slings. Includes automatic counterweight detection Upper counterweight is positioned on central ballast for automatic counterweight self-rigging

Technical Description

Basic machine

Superstructure

Bending and torsion resistant welding construction, made off high strength fine grain steel.

Drive EU Stage V / EPA Tier 4f	Mercedes-Benz diesel engine, type OM 936 LA, 6 cylinder, 230 kW (308 HP) at 1800 rpm, torque 1300 Nm at 1200 rpm The engine complies with emission standard EU Stage V / EPA Tier 4f. Connected with a variable displacement axial piston double pump, a single variable displacement axial piston pump incl. electronic control system and gear pumps. Stainless steel silencer with spark arrestor. ECO mode with optimized fuel consumption at 1500 rpm Power boost function to allow full speed with maximum power and simultaneous movements at 1800 rpm
Tanks	140 gallons Diesel tank; 10.5 gallons tank for AdBlue/DEF; 291 gallons hydraulic tank
Counterweight	Base plate 11,025 lb and four identical 22,050 lb cast slabs with integrated lifting anchors (mushroom-type) and anti-slip top surface Base plate width 11.5 ft; 22,050 lb counterweight slab width 13.1 ft Loadcharts available for various counterweight configurations Includes automatic counterweight detection/monitoring during rigging process Counterweight slabs designed to integrate large access steps, holes for handhold bars (standard) and fall protection mast (option) Counterweight base plate and slabs designed to allow attachment of external 55 kW powerpack Automated mechanical securing of counterweight stack to the upper structure, allows reliable traveling and prevents work at height when rigging
Slewing	Triple-row roller bearing slewing with external ring gear for easy maintenance and service Central lubrication system
Slewing drive	Powerful dual slewing drives with spring-loaded multi-disc brake Mechanical house locking in 0° and 180° positions, controlled through hydraulic cylinder from cabin; allows robust travelling under maximum gradeability and transport on trailer with free boom (no need to tie down boom head)
Hoist	Hoist powered with adjustable hydraulic motor and planetary gear (running in oil bath), with spring applied hydraulically released multi disk brakes and a lowering brake valve for load lowering Resolver (hoist rotation indicator) 1.02 in. rope, length H1 = 804 ft, line pull = 30,400 lbf (30,700 lb) Includes load spectrum monitoring: device to record load spectrum of hoist Preparation for auxiliary hoist, preparation in steel structure and hydraulic system for future installation of auxiliary hoist; includes 2nd deflector sheave in main boom tip
Control system IC-1	With integrated load moment indicator acc. EN13000; color display; displaying of current operating conditions, load charts, fault indicator; signal lights indicating LMI-load; crane data logger Calculation of lifting capacity according to track base and ground angle Variable track width possible (3 track positions) Monitoring of each track frame (horizontal position) Detection of counterweight and central ballast and warning message in case the actual weight does not match with the selected configuration Hook height indication: displaying and programmability of the hook height H1 by IC-1 Working range limiter: displaying and programmability of the work range limits by IC-1 Anemometer: disconnectable, to allow use with all extensions Remote control: control of rigging and operations via wireless remote control, for all functions incl. travelling and self-assembly (option)
Cabin	Type 2.87 ft; infinitely tiltable 16°; sliding window in rear of cab and door; fold-out front window; handrails; tinted safety glass; pull-down sun visor and light curtains. Seat heating Cabin access platform: large platform at front of cabin, with positioning slots for ladder for easy access to cabin, including when crane is still on trailer (engine start) Side platform electrically extendable with 2 push buttons at front platform (accessible from ladder) and inside cabin Heating cabin: engine independent warm water diesel powered heating with 5 kW heating power With timer Radio CD: radio with CD-player with USB connector, Aux-In and Bluetooth® connection Air conditioning: air-conditioning with 5 kW rated cooling capacity
Boom	
Telescopic boom	42.3 ft - 196.9 ft; Single cylinder telescoping system, automatic telescoping; Attachments for all equipment and extensions; 5 steel sheaves integrated in boom head for max. capacity of 290,700 lb (345,000 lb with additional heavy lift sheave (option))
Sheaves	Steel sheaves D520 (for D 1.02 in. rope) with 5.1 in. / 7.5 in. double roller bearing, same type in the whole crane; sheaves are equipped with grease points

Technical Description

Optional Equipment (non-exhaustive)

Carbody

Hydraulic track frame – pinning system	Track frames are pinned to extension beams by means of a portable mobile hydraulic pinning cylinder
Automated central lubrication	Electronically controlled automated lubrication of the extension beam sliding pads

Track frame

Crawler shoes	39.4 in. flat shoes 47.2 in. flat shoes 47.2 in. 2-bar shoes 39.4 in. Polyamid plastic pads (for 39.4 in. 2-bar shoes)
----------------------	---

Superstructure

Engine ECE R96	Optional for non-regulated markets: Mercedes-Benz diesel engine, type OM 936 LA, 6 cylinder, 230 kW (308 HP) at 2200 rpm, torque 1250 Nm at 1200 rpm. The engine complies with emission standard ECE R96 (comparable to EU Stage III A /EPA Tier 3). Stainless steel silencer with spark-arrestor Note: no CE conformity
Aux hoist H2	2nd hoist; Spring-loaded multi-disc brake; Resolver (hoist rotation indicator); Incl. quick couplings; Rope twist prevention is not included Can be self-assembled on counterweight-stack, for various counterweight configurations 1.02 in. rope, length H1 = 804 ft, line pull = 30,400 lbf (30,700 lb) Convenient and safe reeving with reeving rope and rope guiding stick Includes 1.02 in. rope socket Includes load spectrum monitoring: device to record load spectrum of hoists with memory box attached to hoist winch to allow recording of loads irrespective of the crane the winch is installed on.

Jib – Extensions

HAV 16.4 ft	16.4 ft; Lattice jib, manual offset 0°/18°/36° with hydraulic assist cylinder; 2-sheave head (steel sheaves for 1.02 in. rope); Incl. transport storage Consist of 11.5 ft foot section + 4.9 ft tip section
HAV-HY 16.4 ft	16.4 ft; Lattice jib, hydraulic offset from 0° to 36° with two hydraulic cylinders, adjustable under load; 2-sheave head (steel sheaves for 1.02 in. rope); Incl. transport storage Consist of 11.5 ft foot section + 4.9 ft tip section
HAV 75.5 ft	75.5 ft; Lattice jib, manual offset 0°/18°/36° with hydraulic assist cylinder; 2-sheave head (steel sheaves for 1.02 in. rope); Incl. transport storage (only 16.4 ft jib can be stowed in transport position) Consist of 11.5 ft foot section + 4.9 ft tip section + 19.7 ft intermediate section + 39.4 ft intermediate section Possible jib length: 16.4 ft, 36.1 ft, 55.8 ft, 75.5 ft
HAV-HY 75.5 ft	75.5 ft; Lattice jib, hydraulic offset from 0° to 36° with two hydraulic cylinders, adjustable under load; 2-sheave head (steel sheaves for 1.02 in. rope); Incl. transport storage (only 16.4 ft jib can be stowed in transport position) Consist of 11.5 ft foot section + 4.9 ft tip section + 19.7 ft intermediate section + 39.4 ft intermediate section Possible jib length: 16.4 ft, 36.1 ft, 55.8 ft, 75.5 ft
R1 (Swing-away rooster sheave)	Swing-away rooster sheave for 1.02 in. rope, incl. transport storage; For single-reeving high speed operation with elevated hook height; incl. electrical equipment and hoist limiter.

Hook Blocks

Hook block 160-5-26-E or D	For 1.02 in. rope, 5-sheave (11-lines) useable up to 318,100 lb, NOT SUITABLE FOR MAX. LOAD 345,000 lb Vario: Vario system with removable side weight (cheek plates) (2,430 lb or 2,870 lb); with removed plates, the hook block weight corresponds to the weight of the 3-sheave block Single or double hook
Hook block 100-3-26-E or D	For 1.02 in. rope, 3-sheave (7-line) – useable up to 206,600 lb Single or double hook
Hook block 41-1-26-E or D	For 1.02 in. rope, 1-sheave (3-line) – useable up to 90,300 lb Single or double hook
Headache ball 16-0/26-E	For 1.02 in. rope – hook, red – useable up to 30,400 lb

tac.sales@tadano.com
www.tadanoamericas.com

Tadano Europe Holdings GmbH

Dinglerstraße 24, 66482 Zweibrücken, Germany
Phone +49 6332 830

Tadano America Corporation

4242 West Greens Road, Houston, TX 77066
Phone: +1 (281) 869-00300 · Fax: +1 (281) 869-0040



Lifting your dreams

